

Diagnostic Loop Overview

100

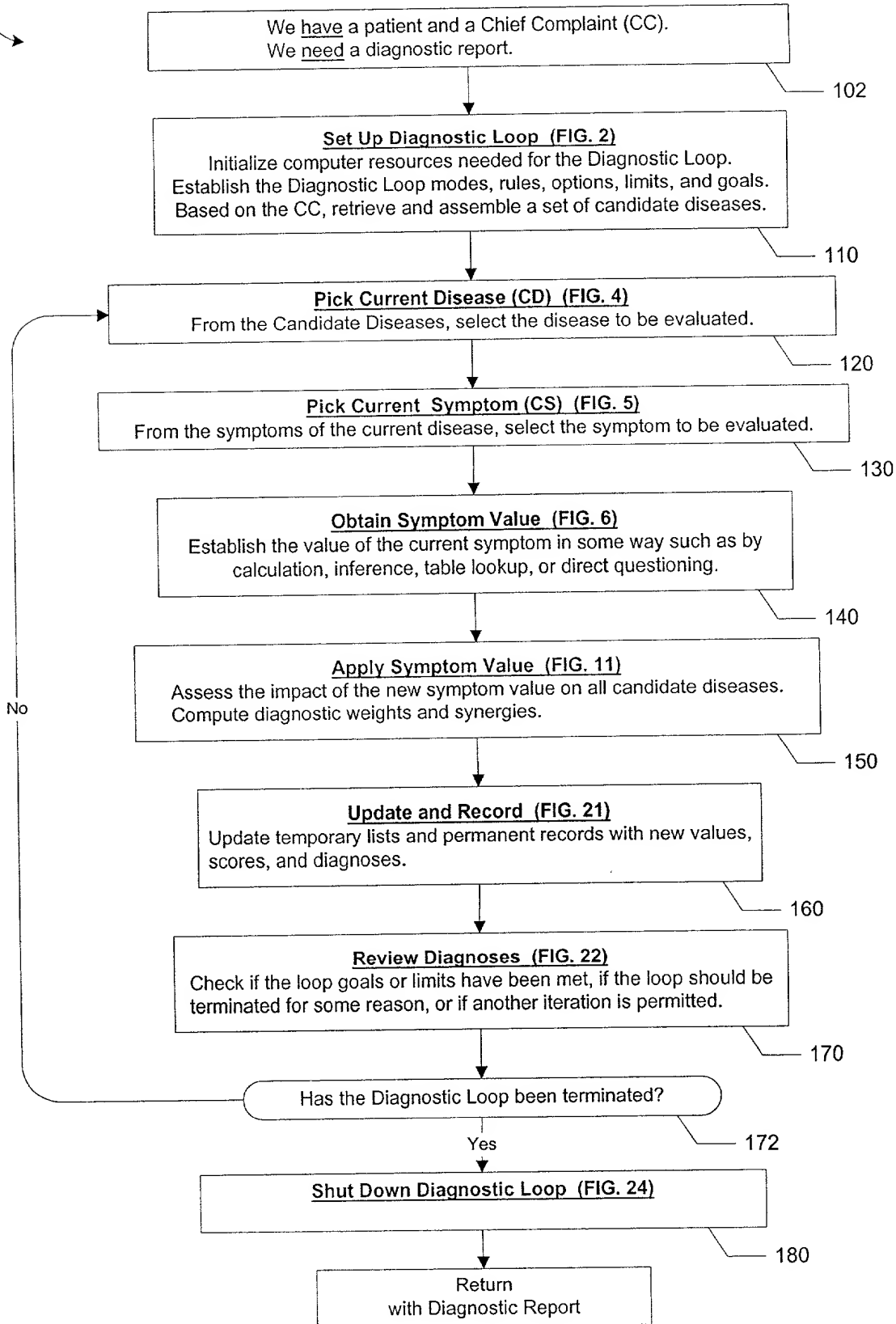


FIG. 1

182

Set Up Diagnostic Loop

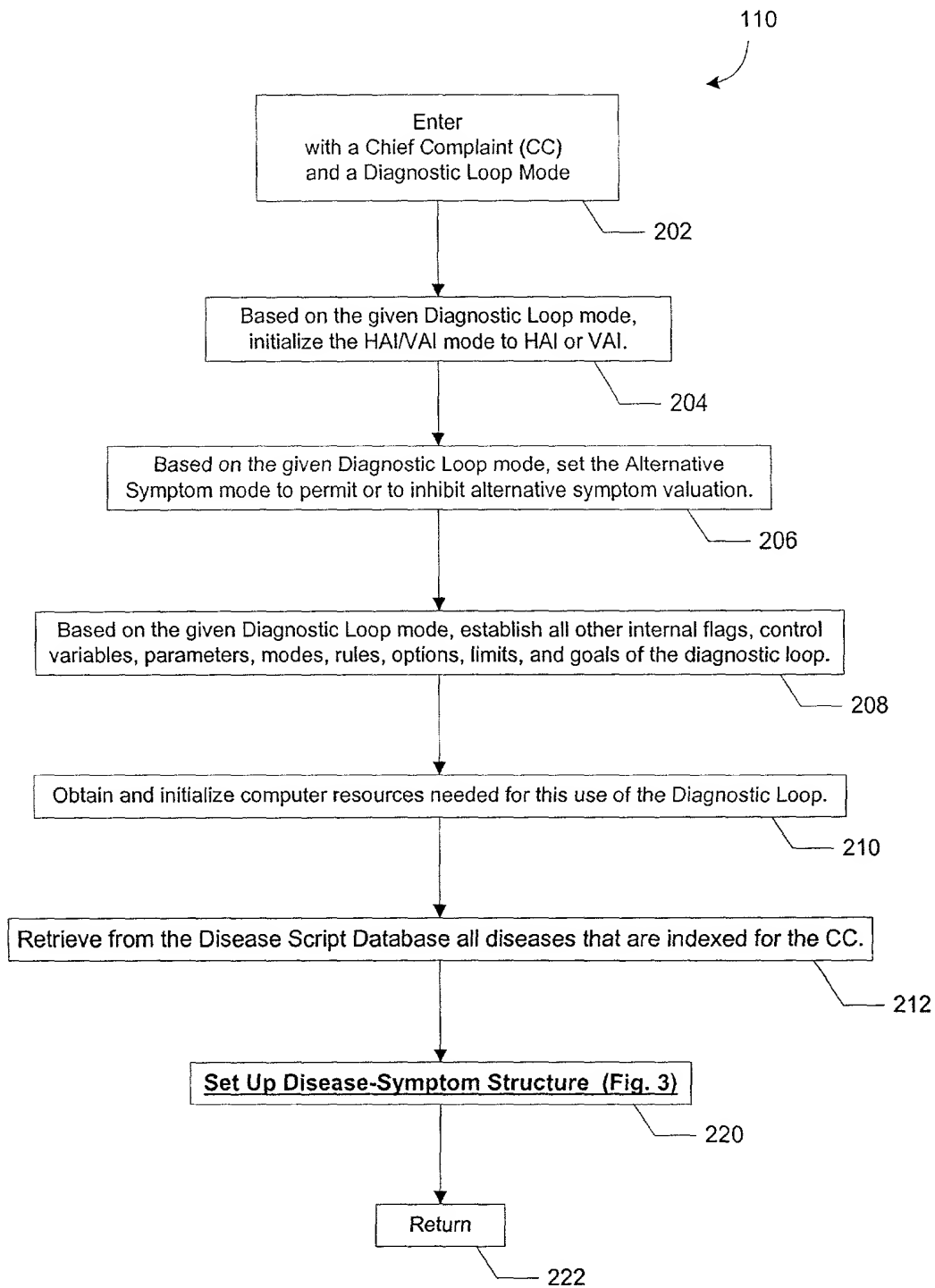


FIG. 2

Set Up Disease-Symptom Structure

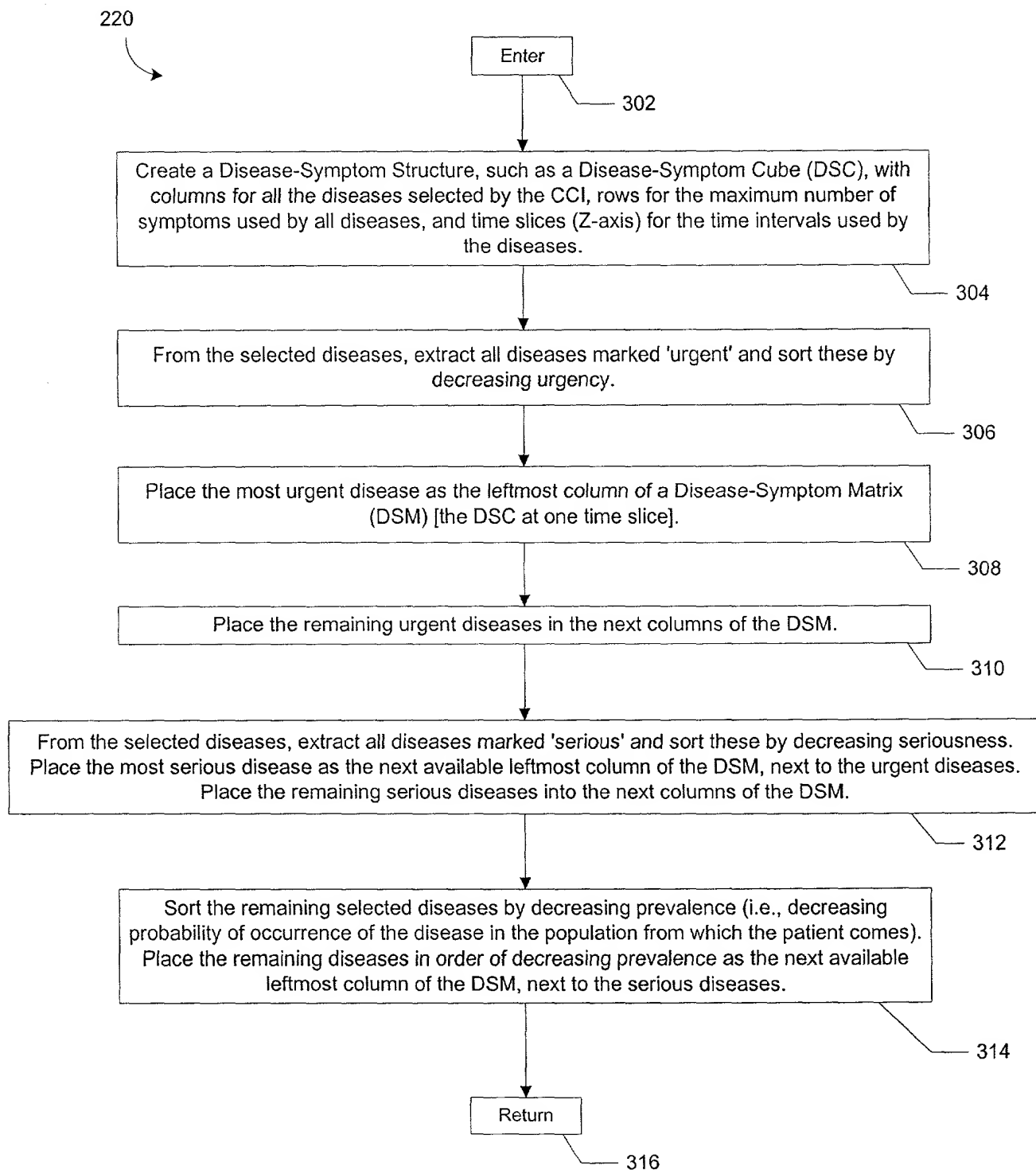


FIG. 3

120

Pick Current Disease

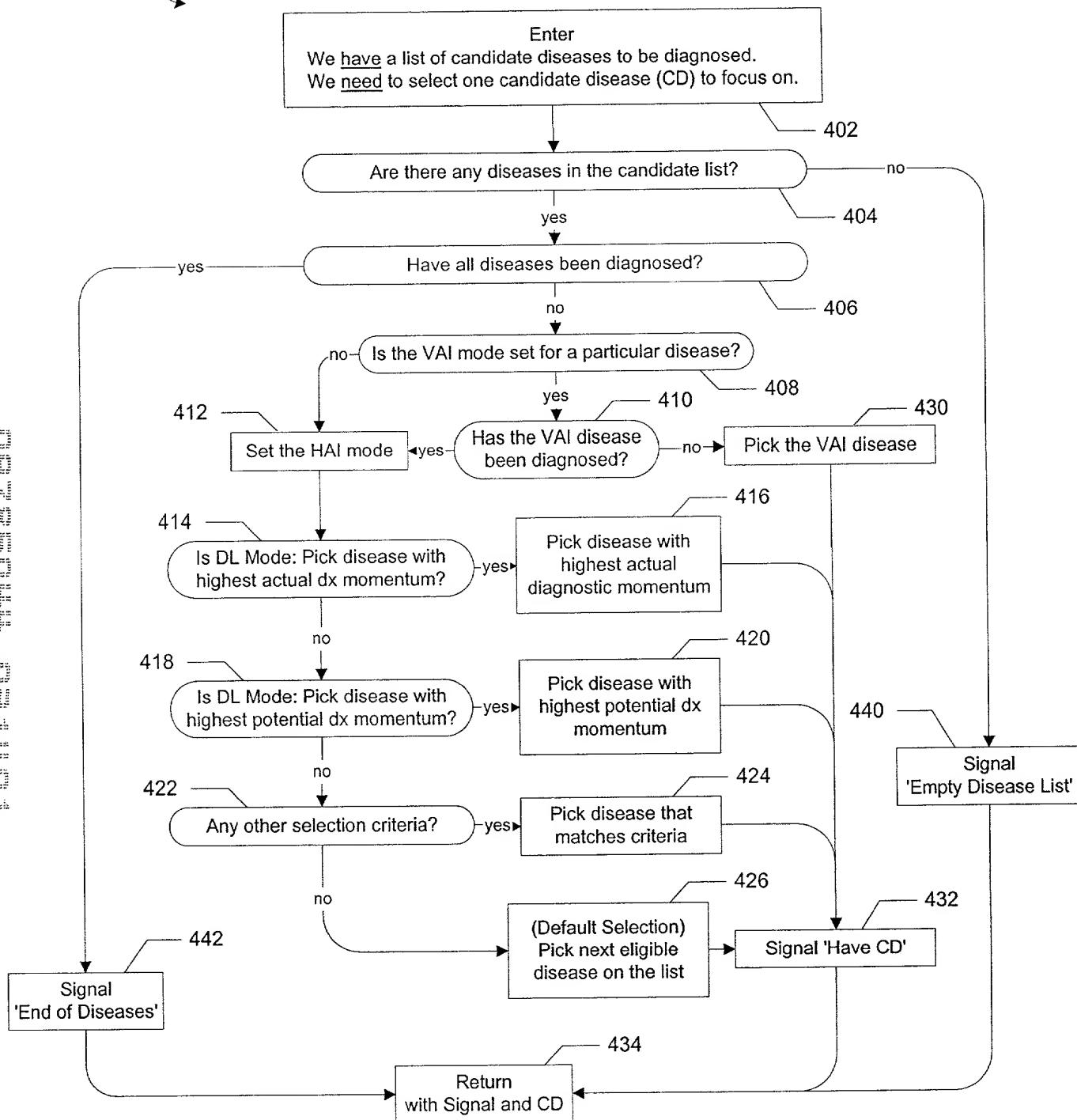


FIG. 4

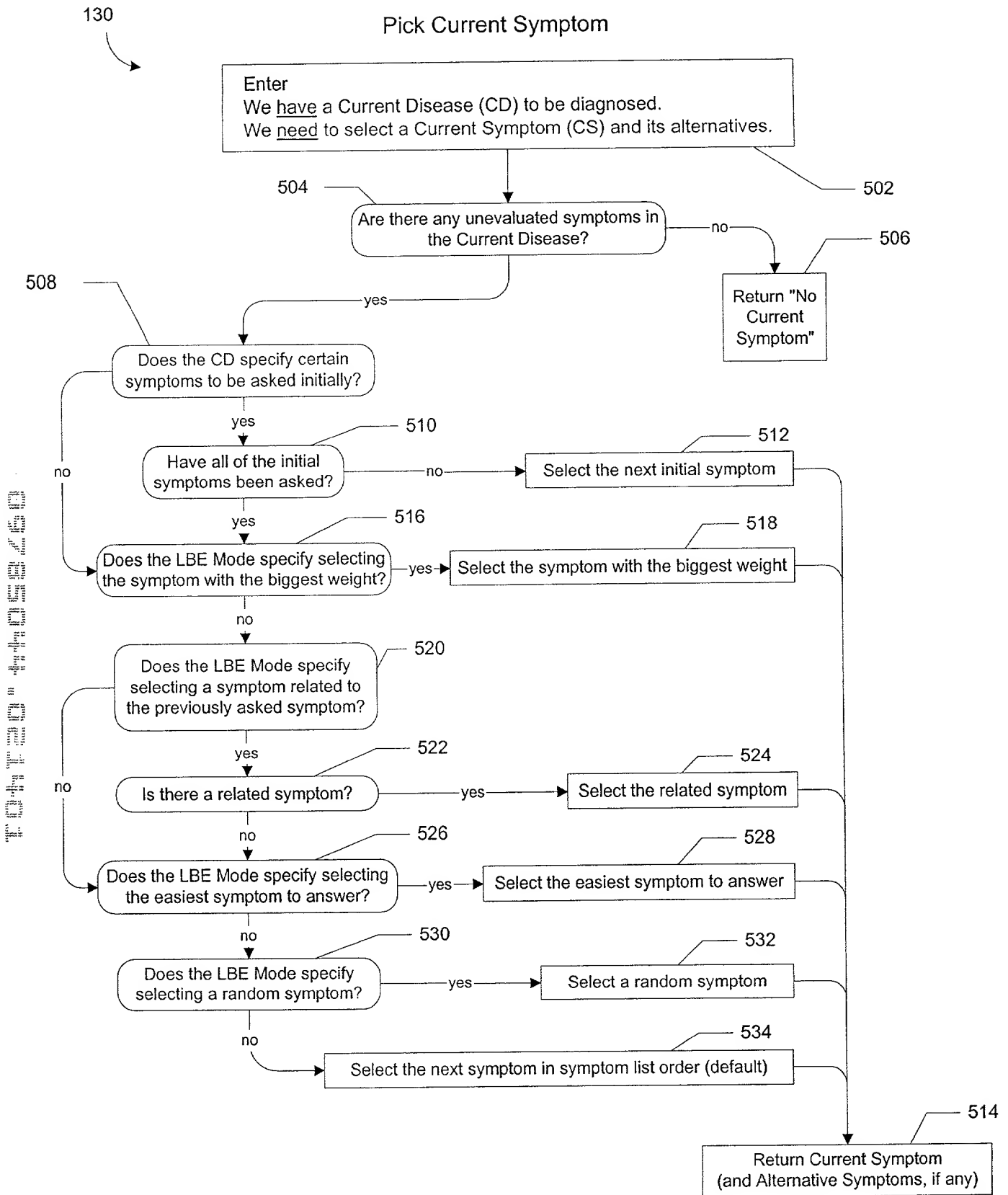


FIG. 5

Obtain Symptom Value

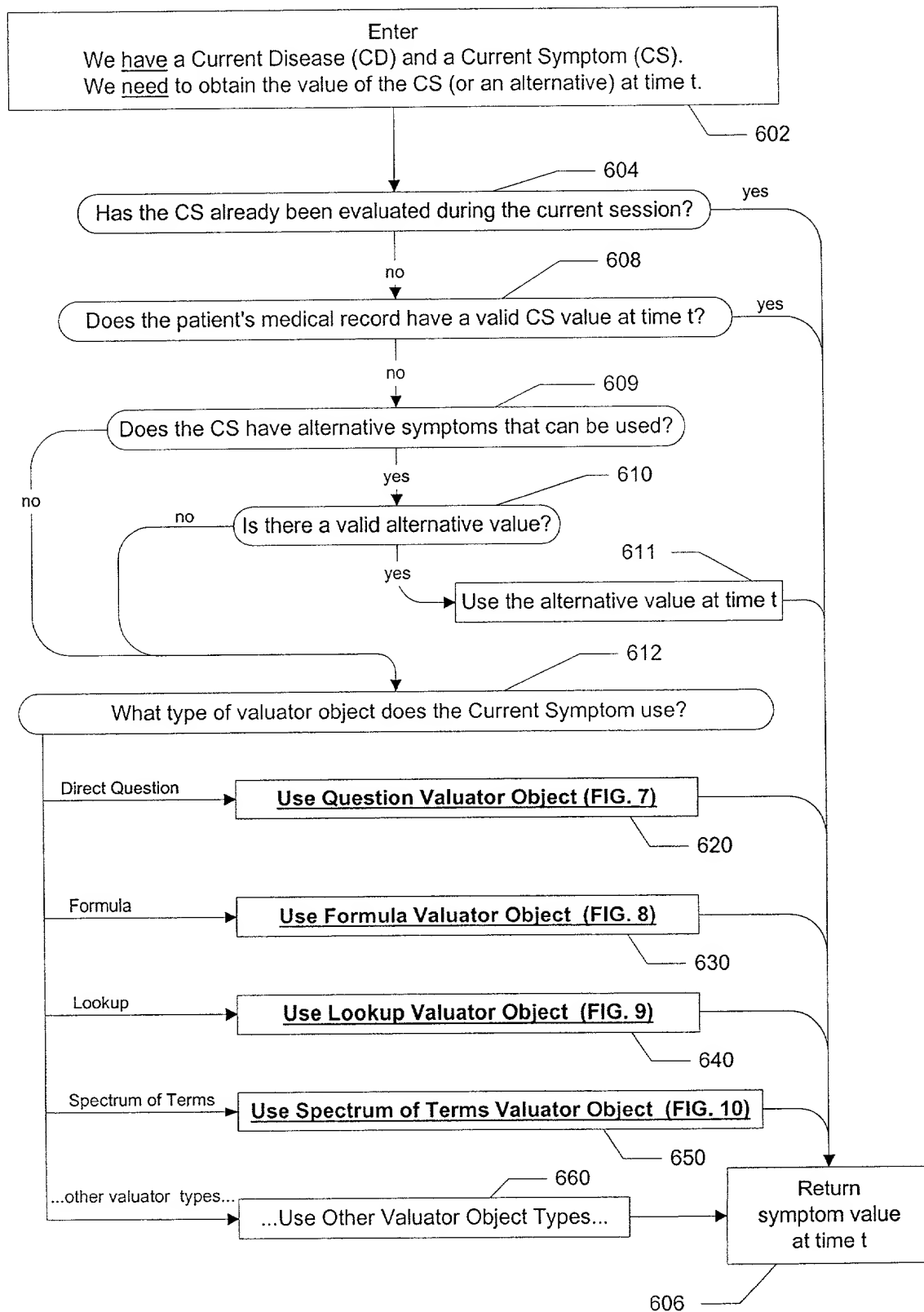


FIG. 6

620

Use Question Valuator Object

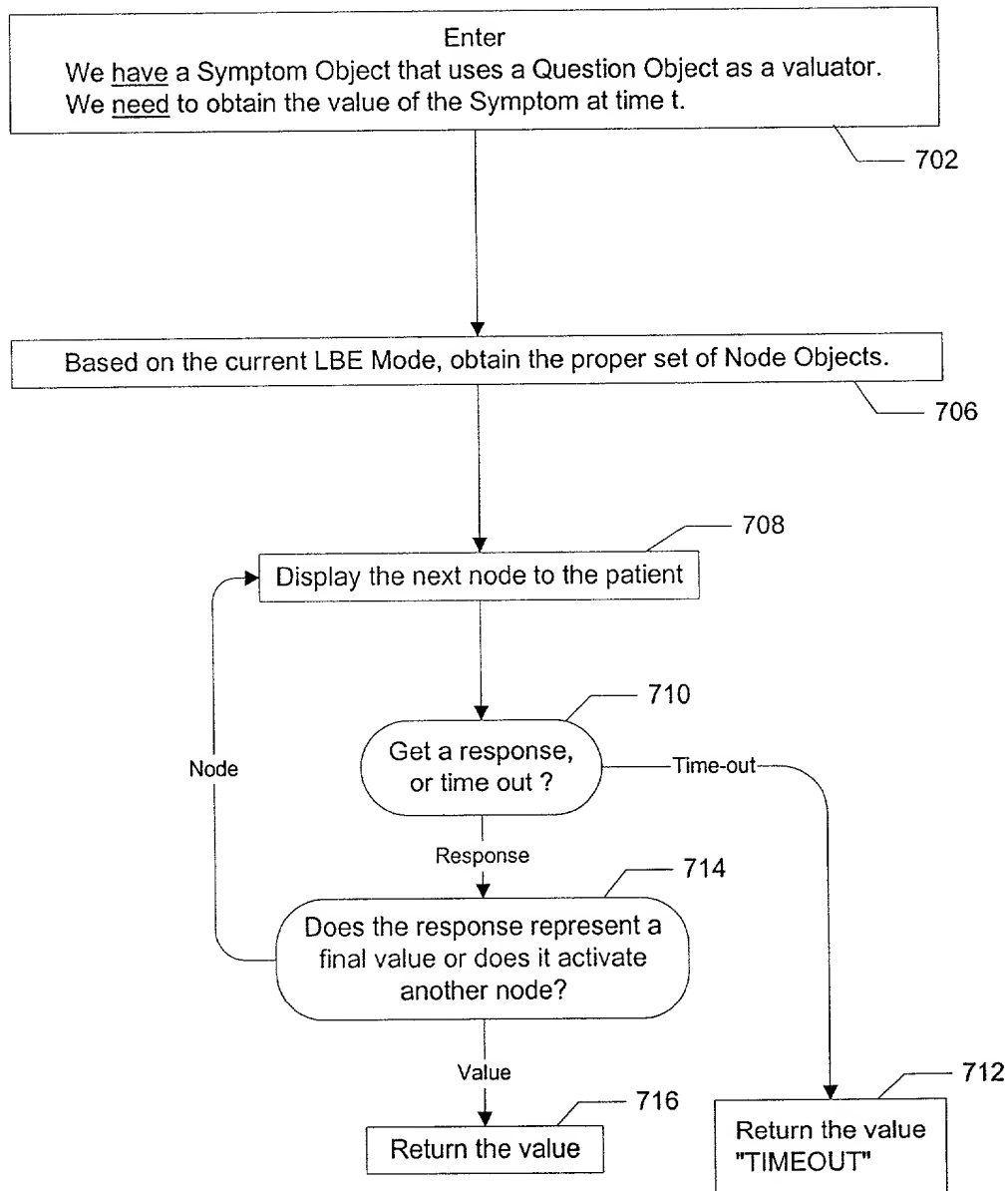


FIG. 7

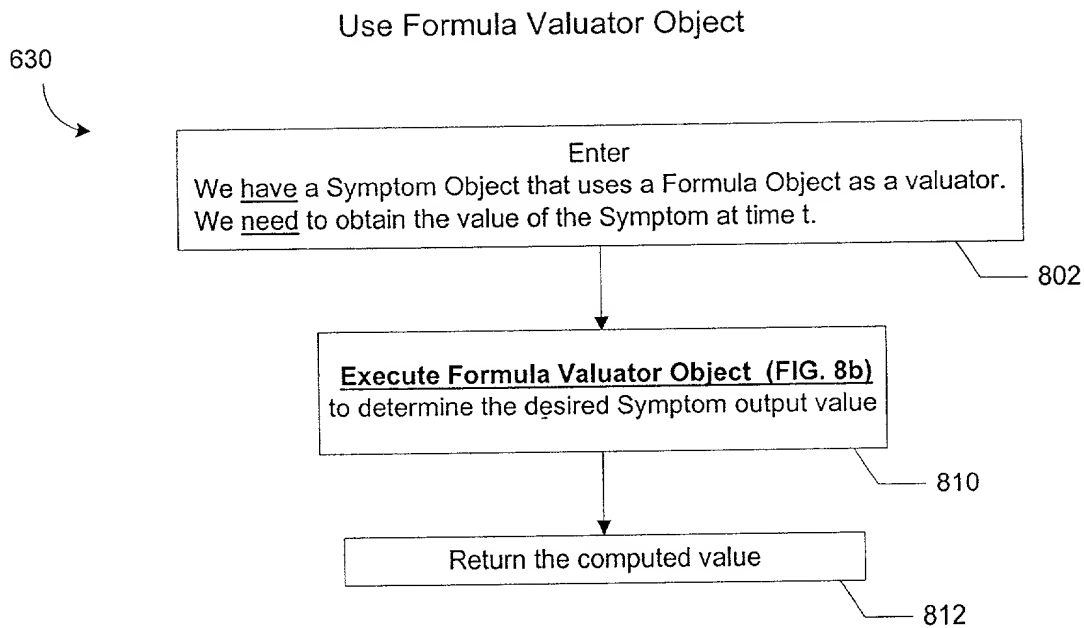


FIG. 8a

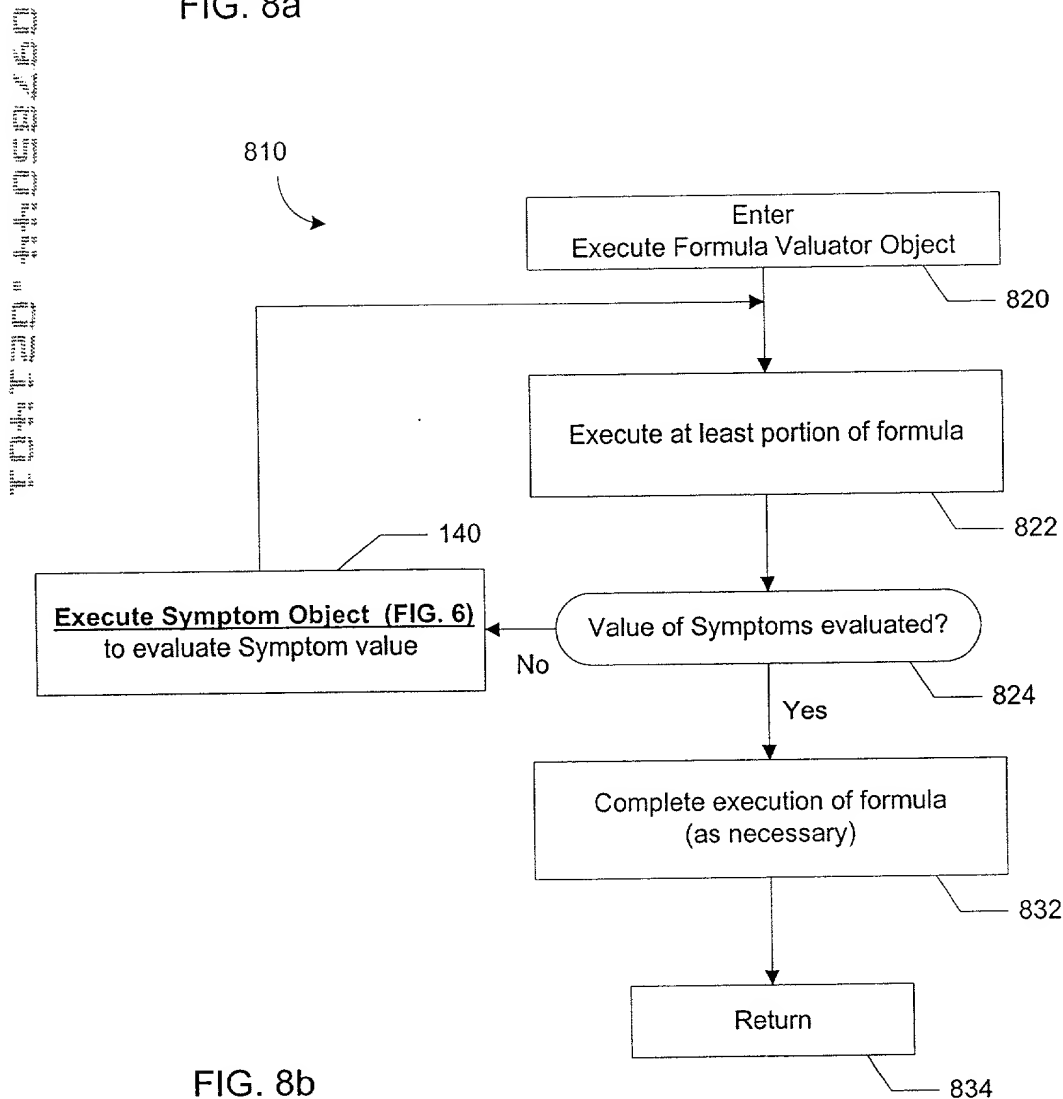


FIG. 8b

640

Use Lookup Valuator Object

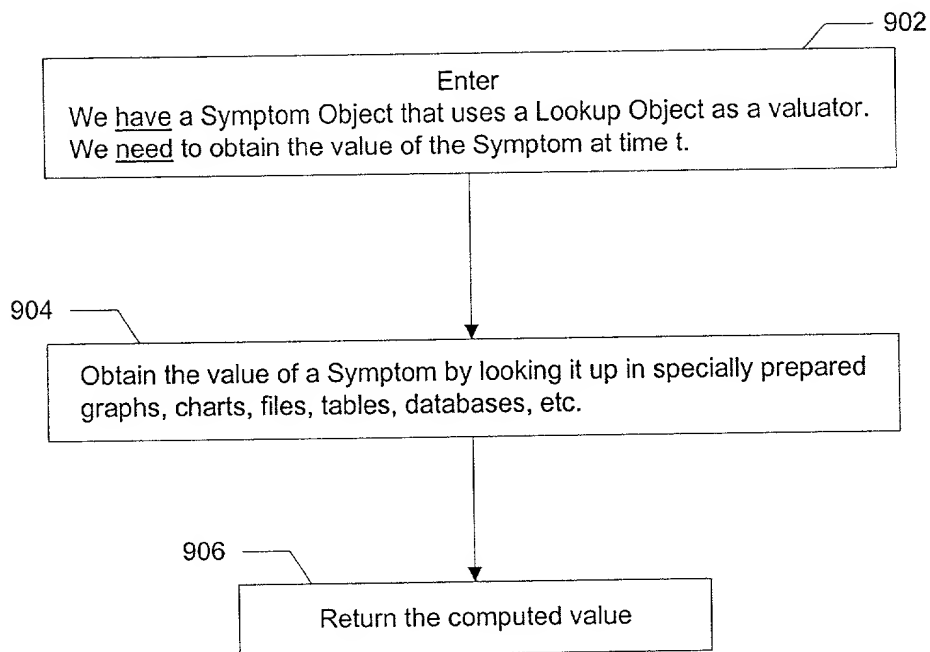


FIG. 9

Use Spectrum of Terms Valuator Object

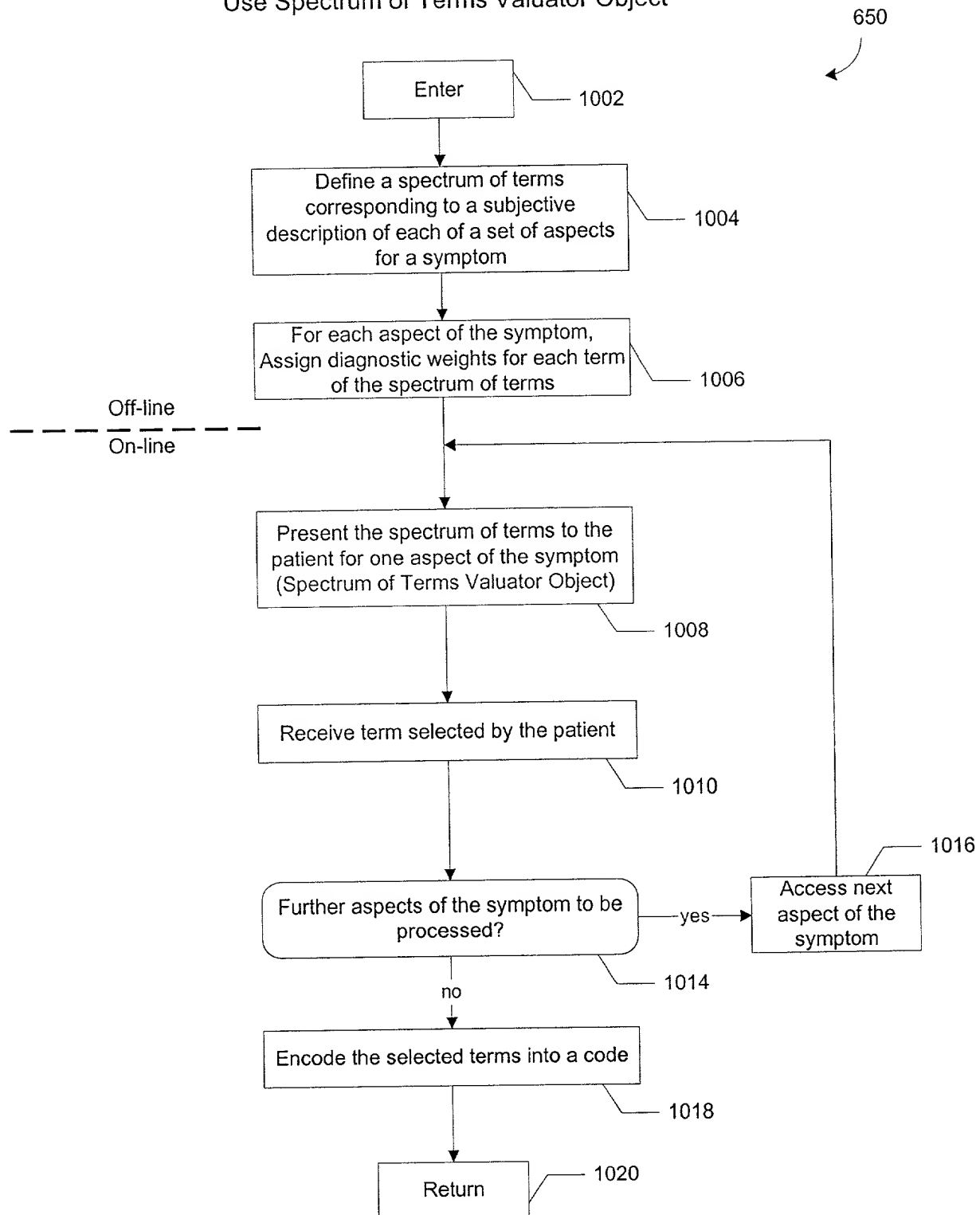


FIG. 10

Apply Symptom Value

150

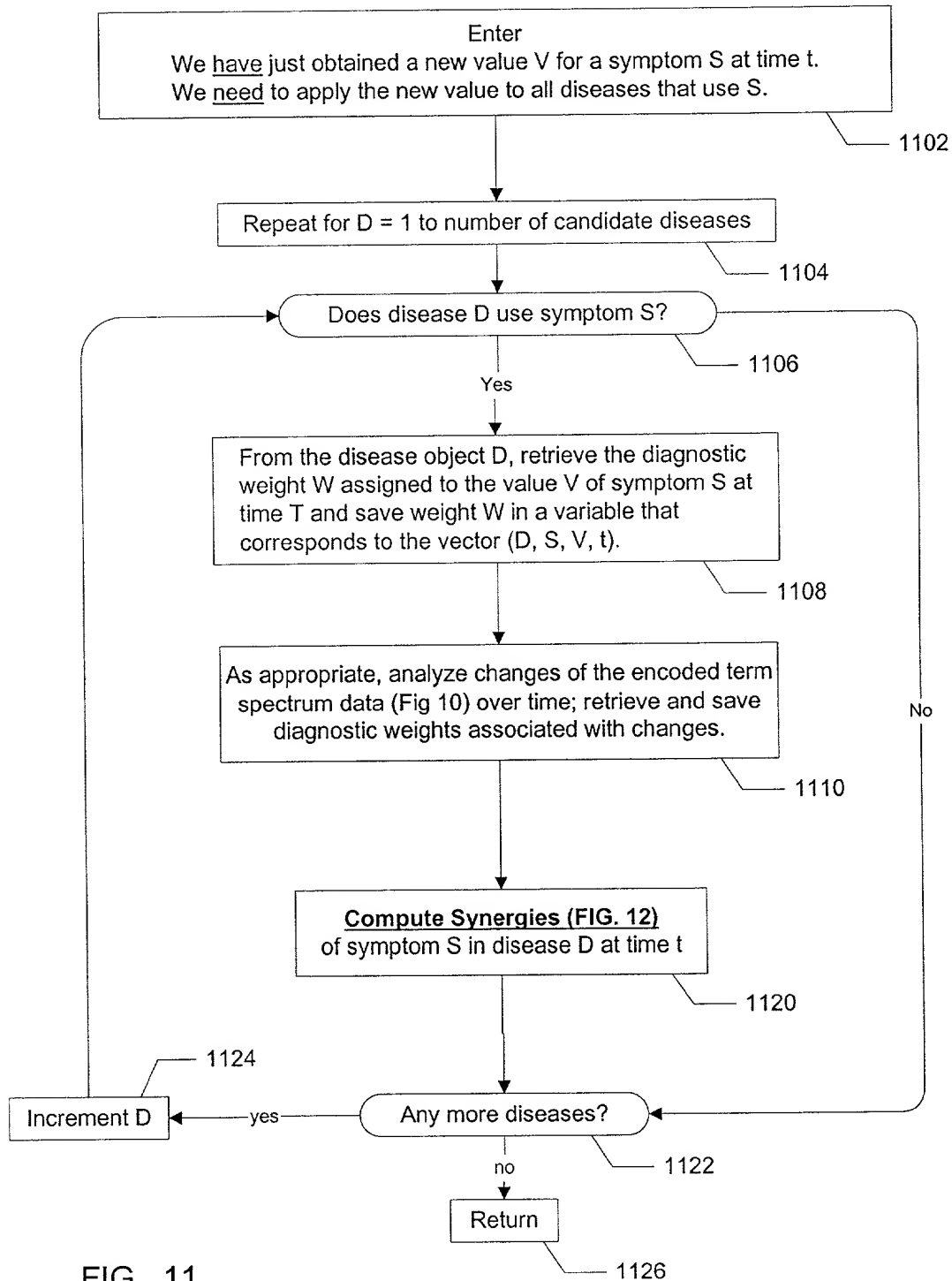


FIG. 11

1120

Compute Synergies

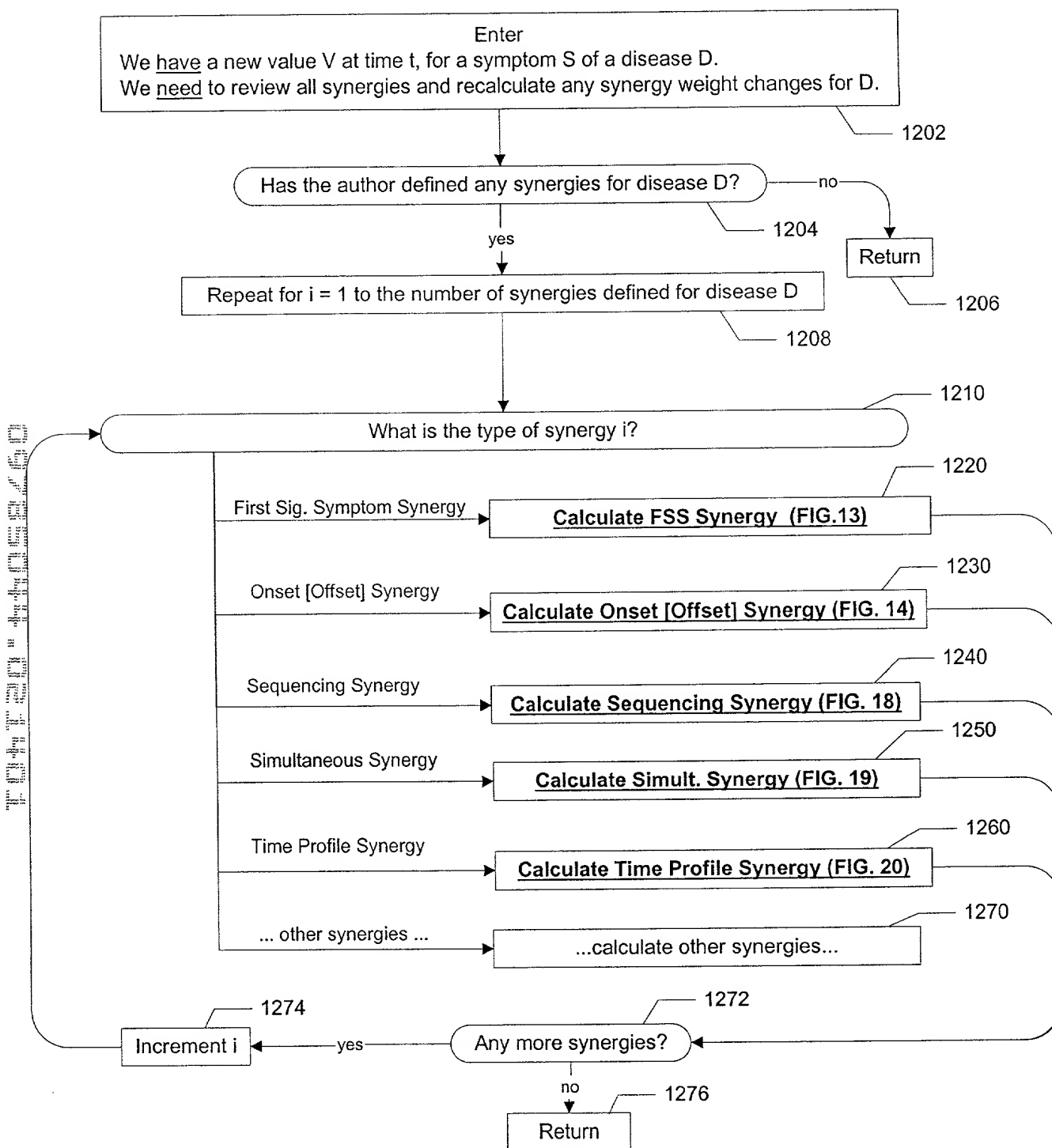


FIG. 12

Calculate First Significant Symptom (FSS) Synergy

1220

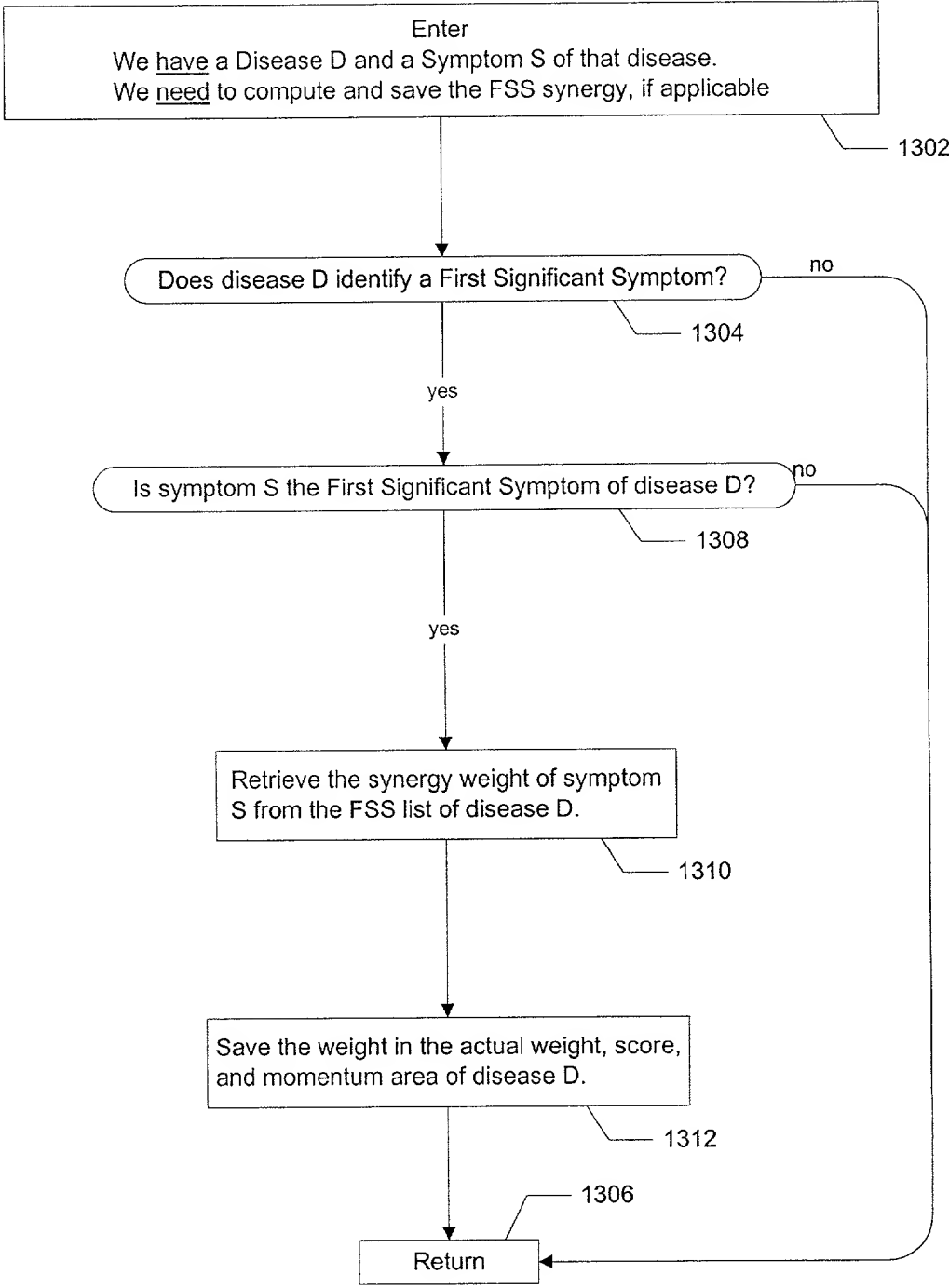


FIG. 13

Calculate Onset [Offset] Synergy

1230

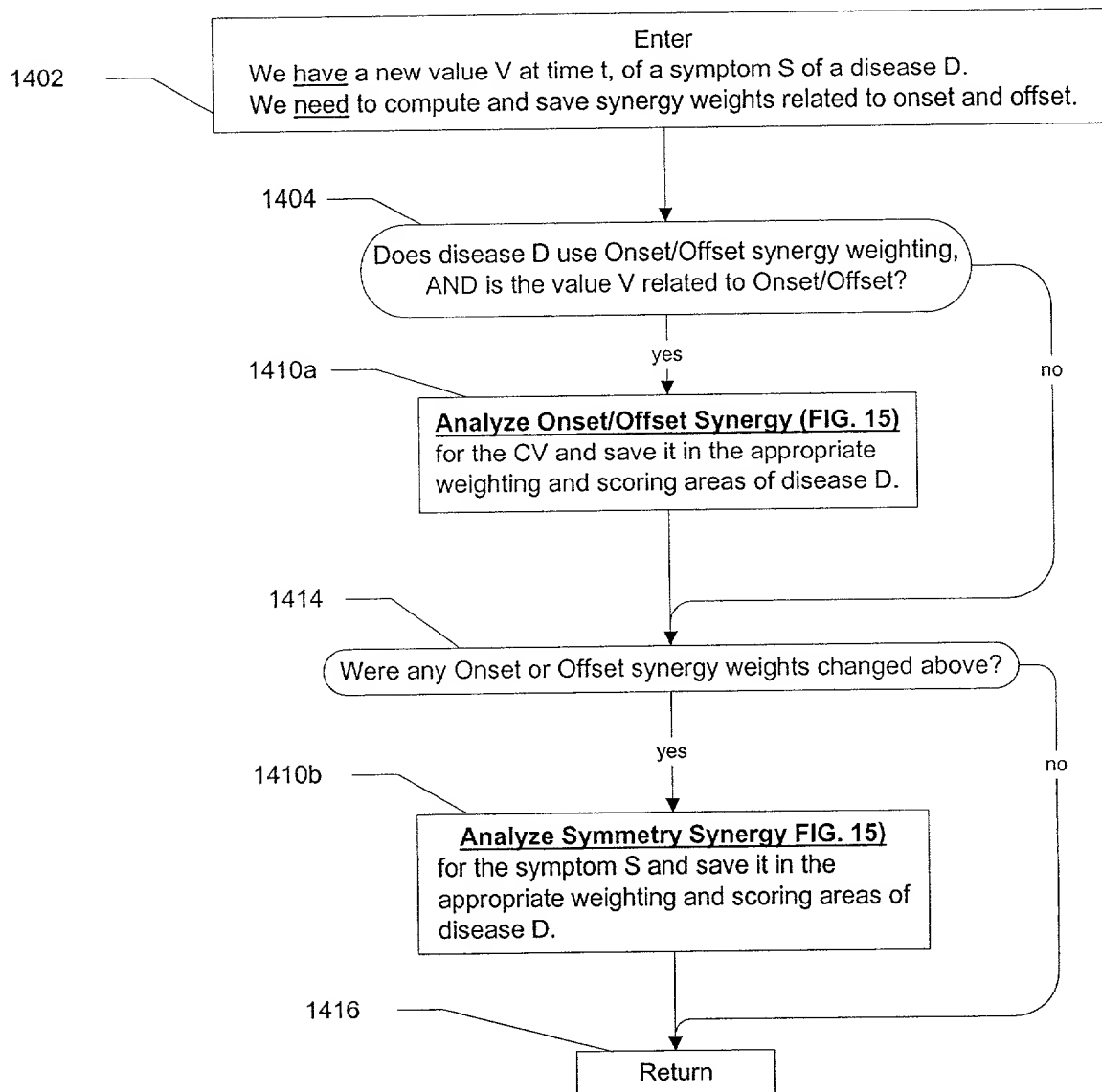


FIG. 14

Analyze Onset [Offset] Synergy

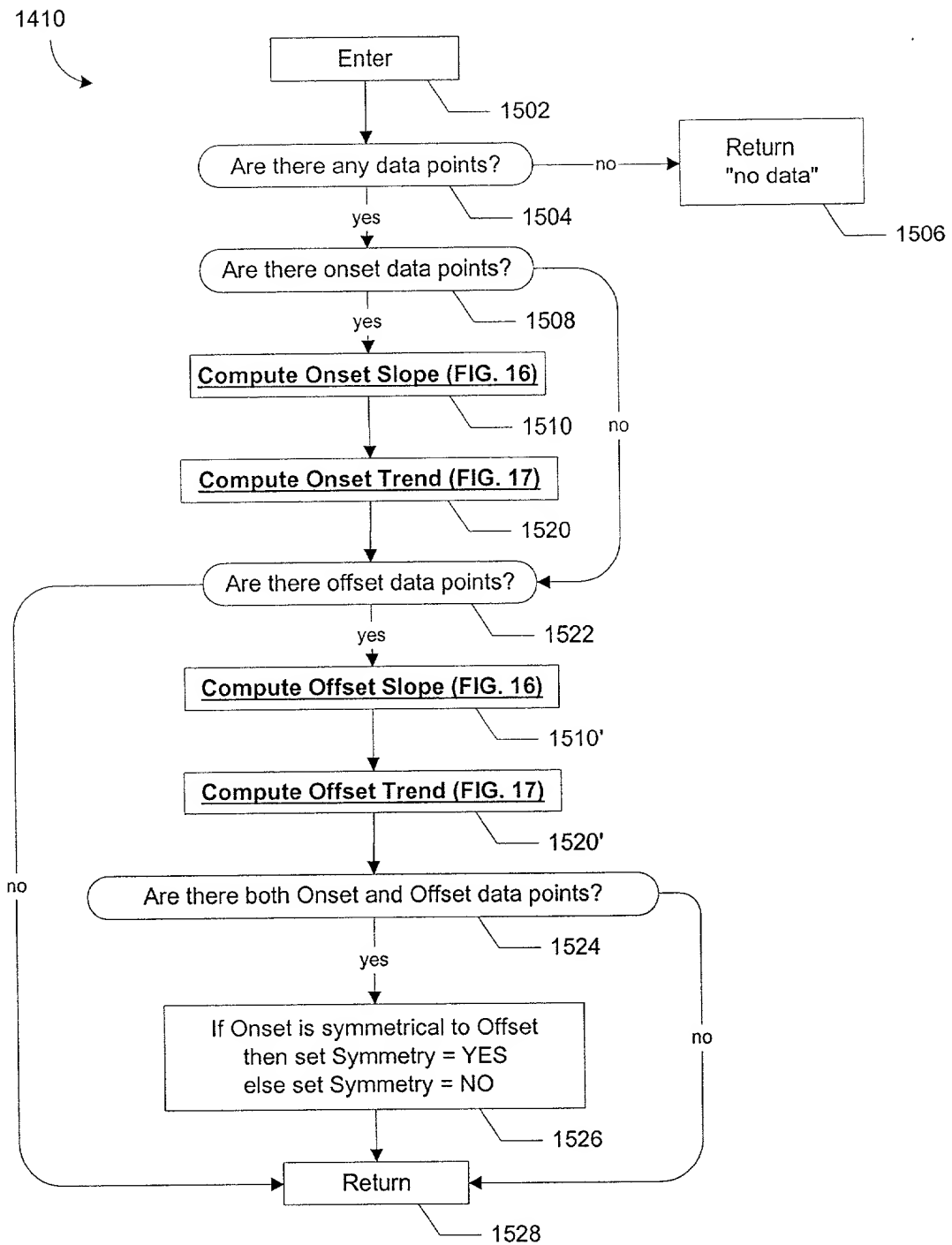


FIG. 15

Compute Onset [Offset] Slope

1510

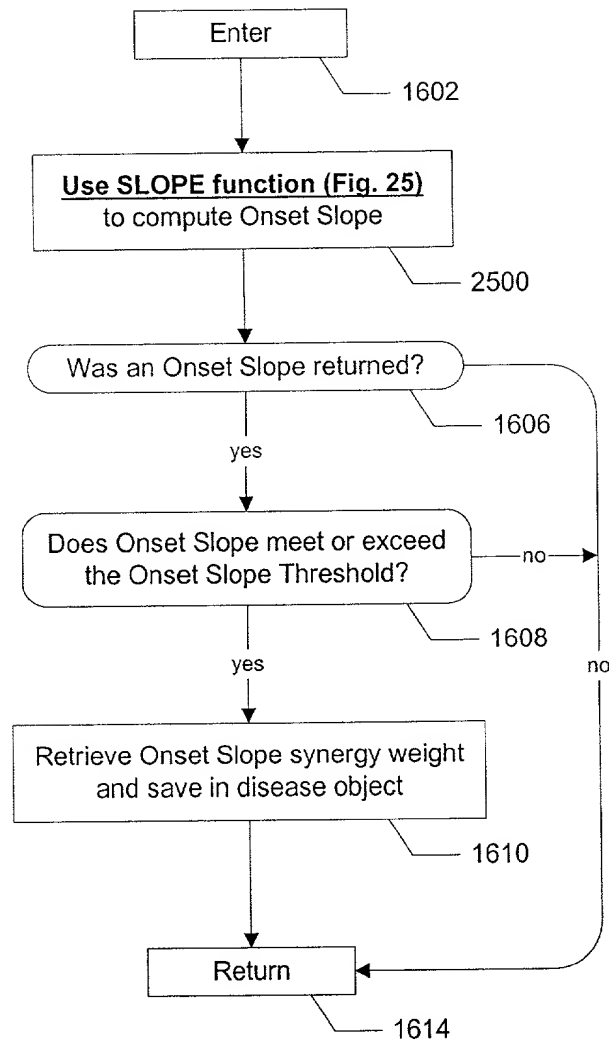


FIG. 16

Compute Onset [Offset] Trend

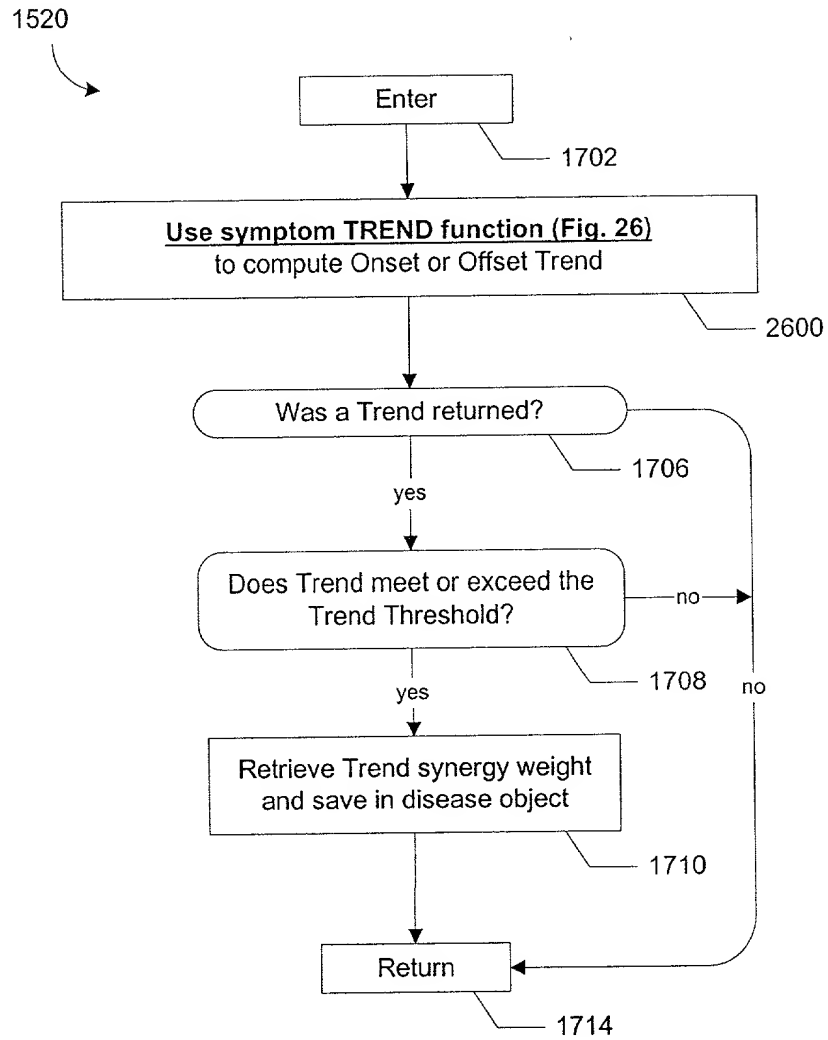


FIG. 17

Calculate Sequence Synergy

1240

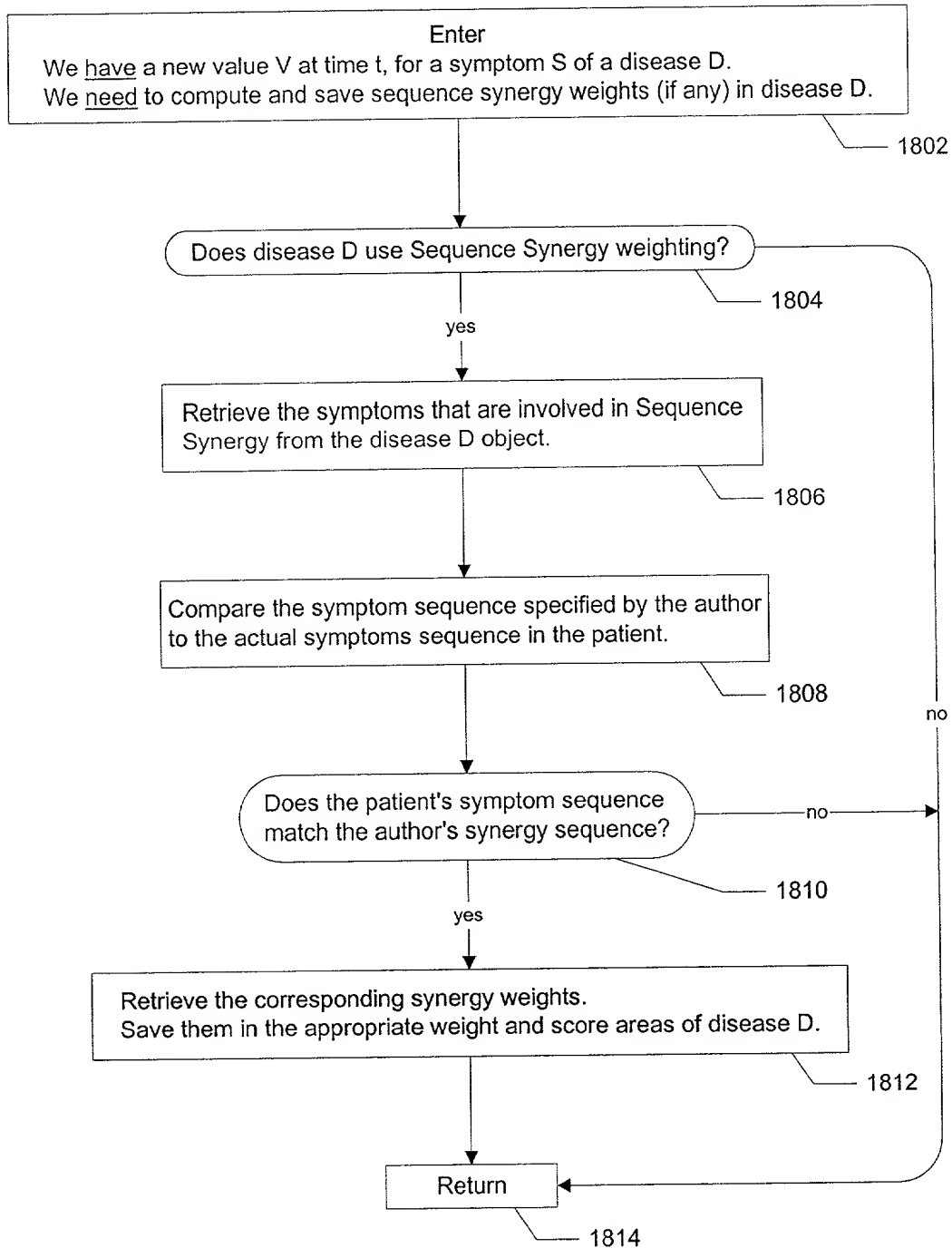


FIG. 18

Calculate Simultaneous Synergy

1250

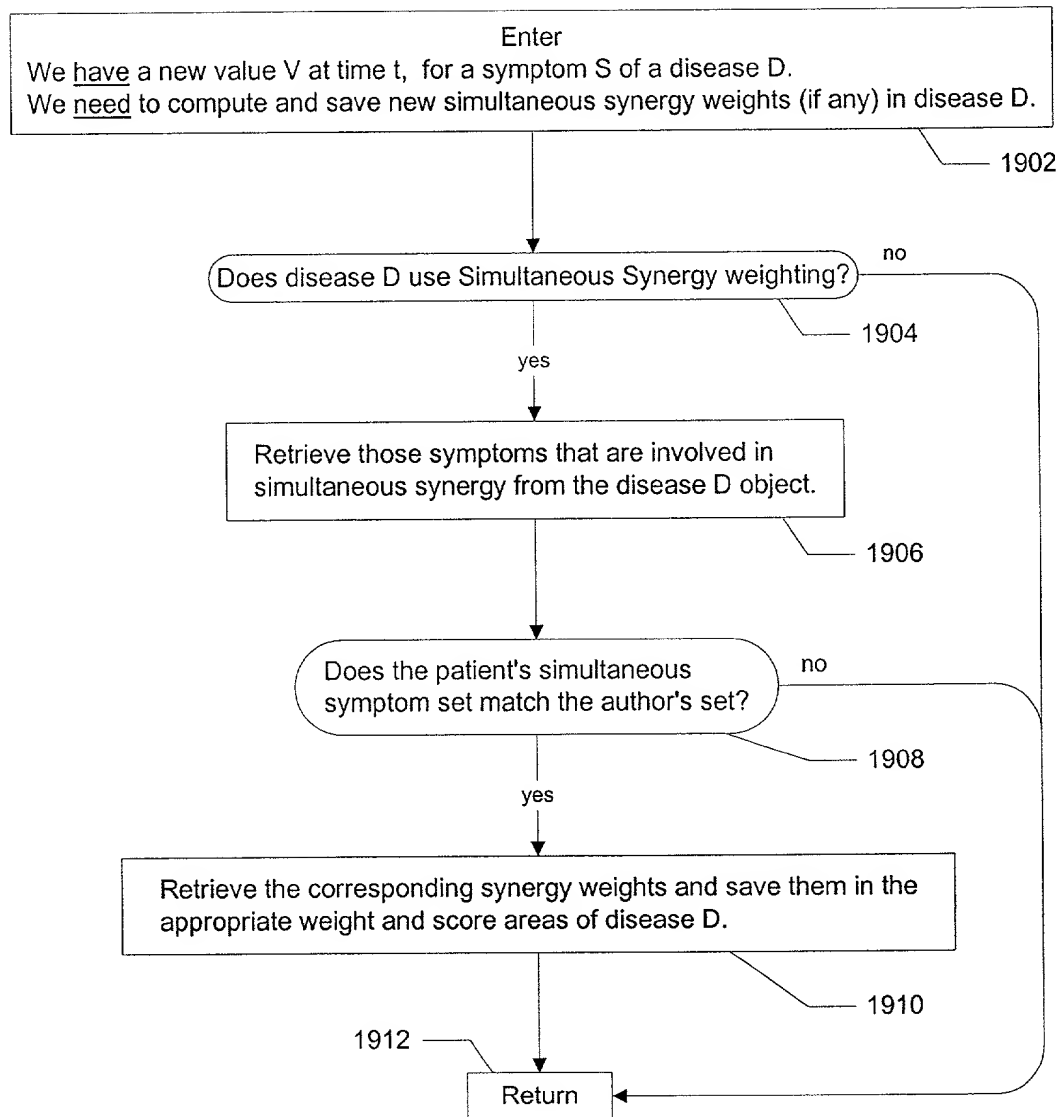


FIG. 19

Calculate Timeline Profile Synergy

1260

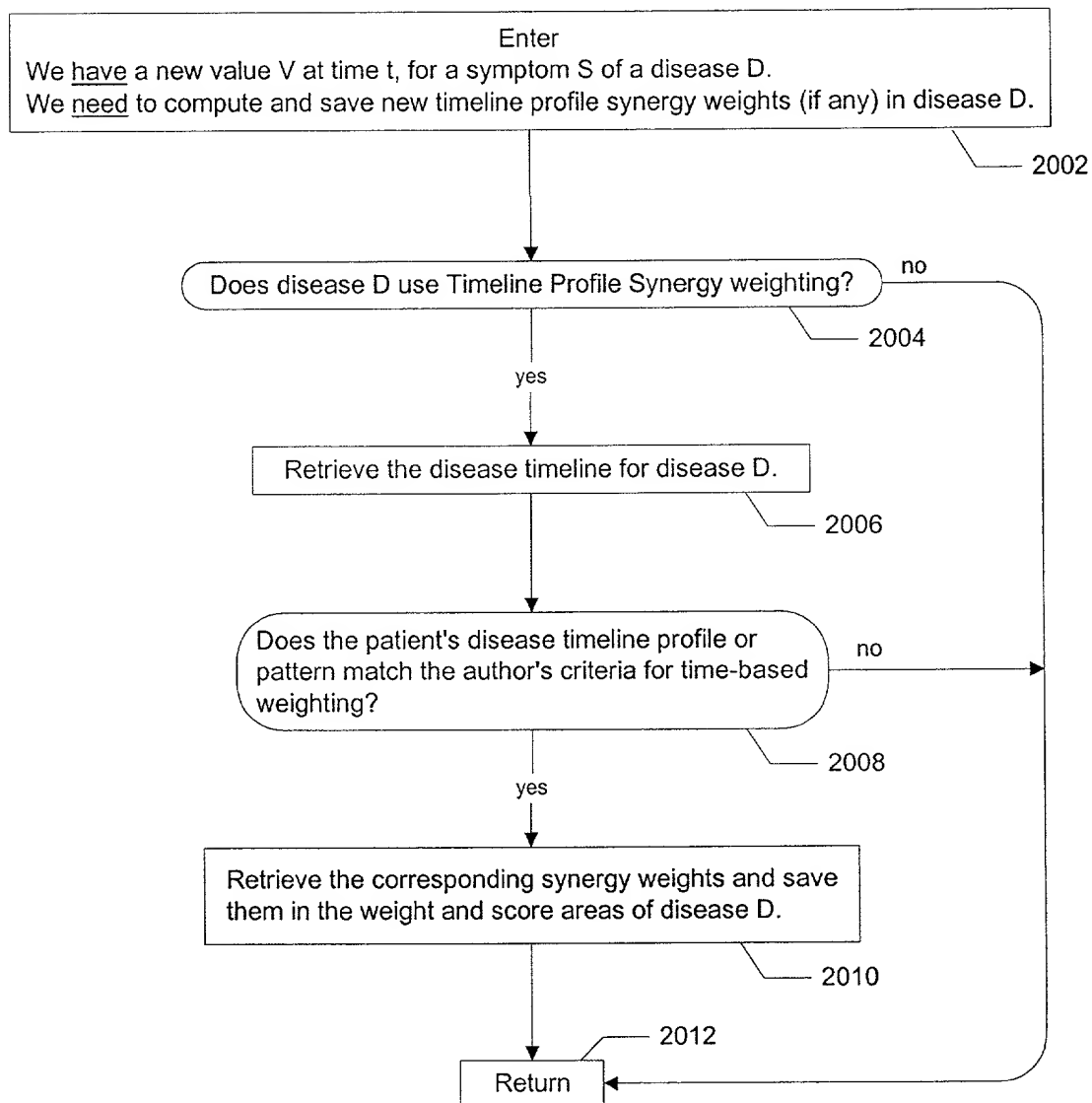


FIG. 20

Update and Record

We have established new weights for all diseases that use the Current Symptom CS. We need to update the diagnostic score and momentum of these diseases, and prepare for another iteration of the diagnostic loop.

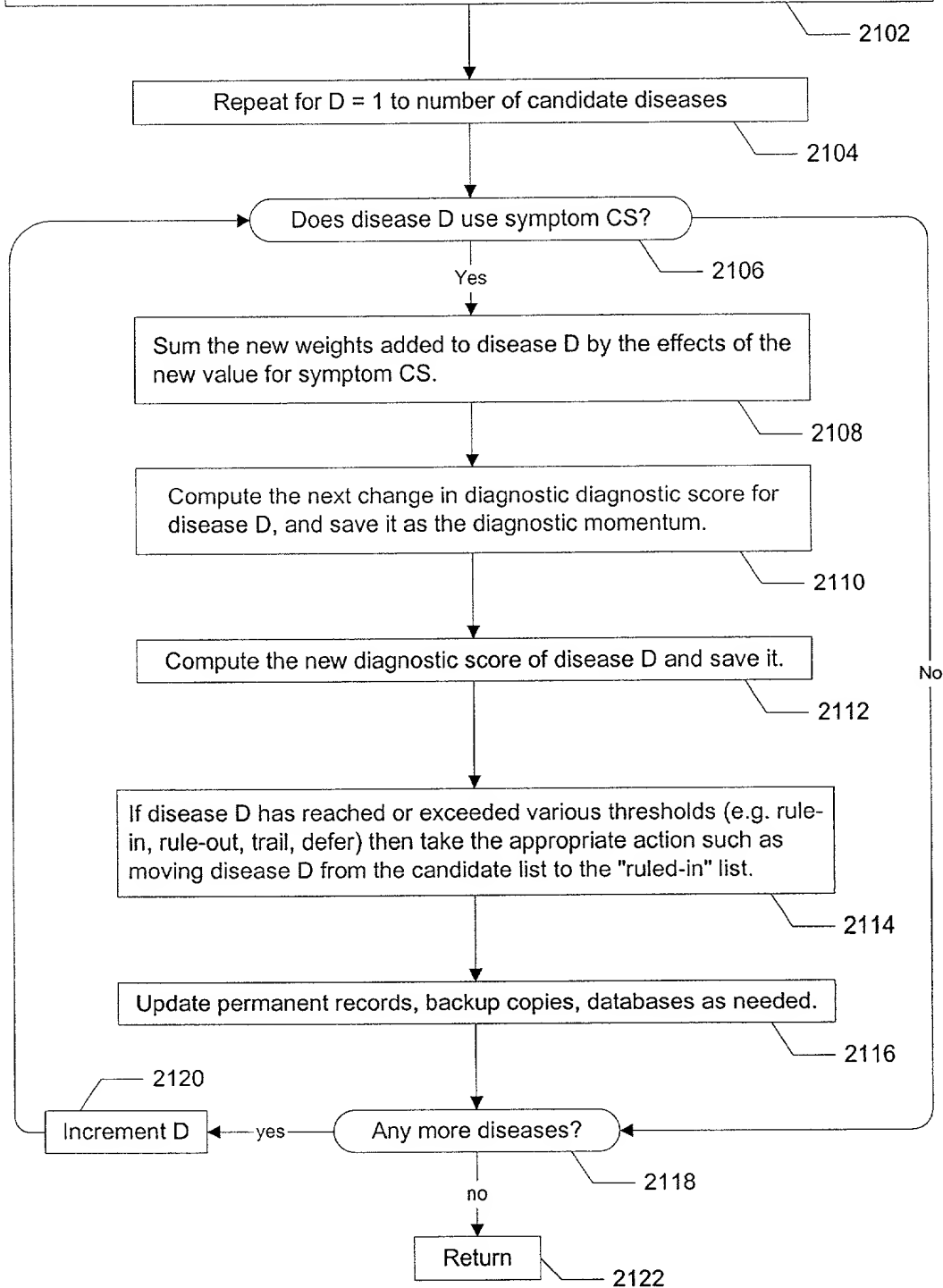


FIG. 21

170

Review Diagnoses

We have obtained a new symptom value and updated all candidate disease scores.
We need to review how this has changed the overall diagnostic complex, to see if we can/must terminate the loop or whether we can continue for another iteration.

2202

Review the cumulative scores and momentum variables of all Candidate Diseases.
Has one particular disease advanced (score) or is it advancing (momentum) significantly enough to select it directly for the next questioning?

2204

No

Yes

Set HAI/VAI to VAI for disease D.

2208

Set HAI/VAI mode to HAI

2206

Review Diagnostic Goals (FIG. 23)

Check if diagnostic loop goals or limits have been reached.

2210

Check if any Action Plateaus have been reached.
Allow the OS, other FO modules, or the patient to interrupt, pause, adjourn, repeat, or terminate the loop, or to modify any parameters, modes, or other control variables.

2212

Set Loop Continuation or Termination Flag(s)

2214

Return
with loop continuation instructions

2216

FIG. 22

2210

Check Goals & Limits

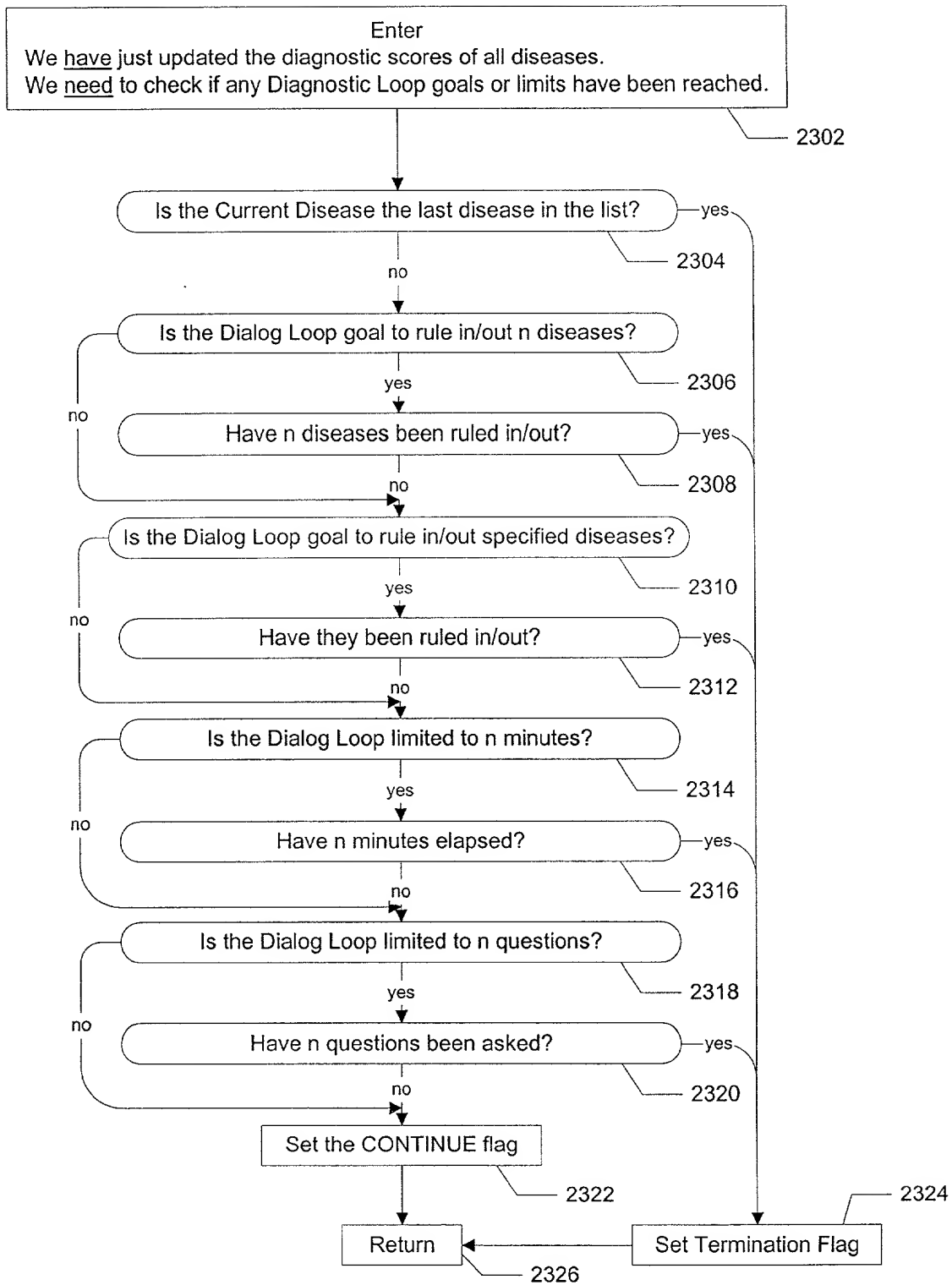


FIG. 23

Shut Down Diagnostic Loop

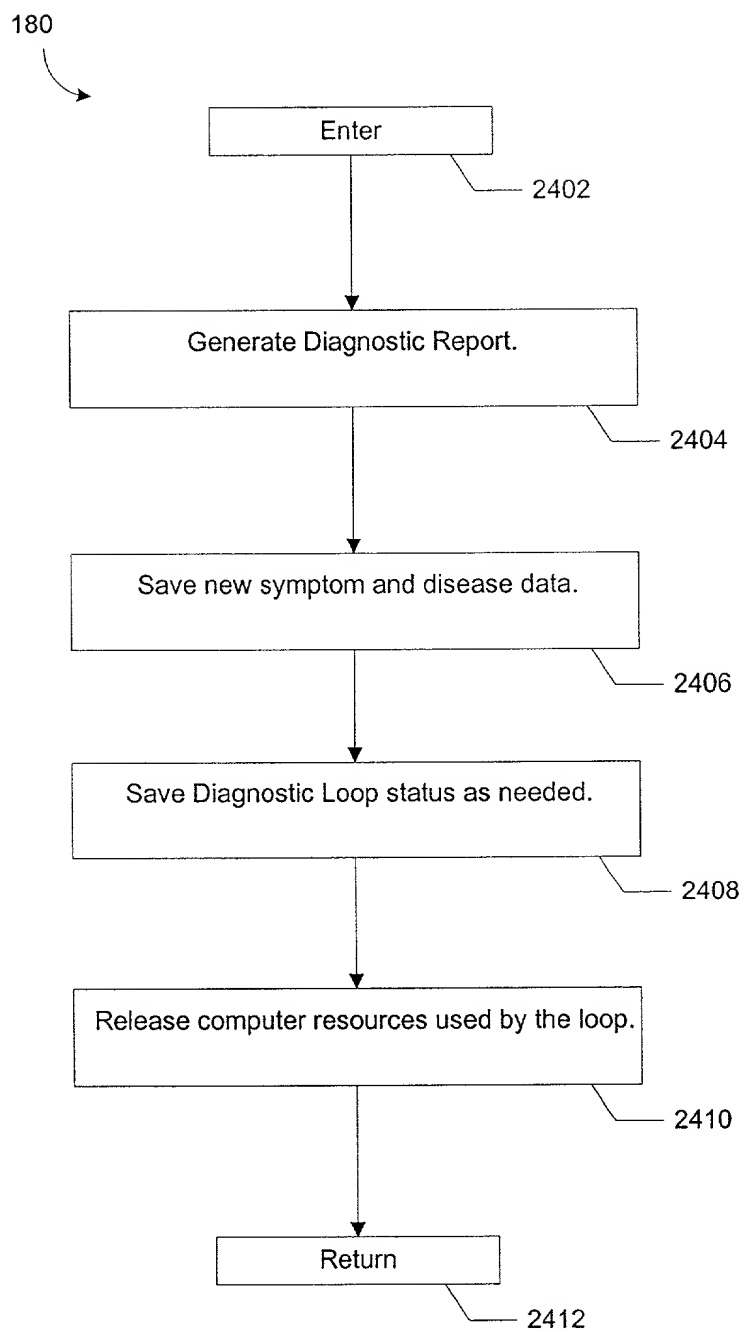


FIG. 24

Symptom Object - SLOPE Method

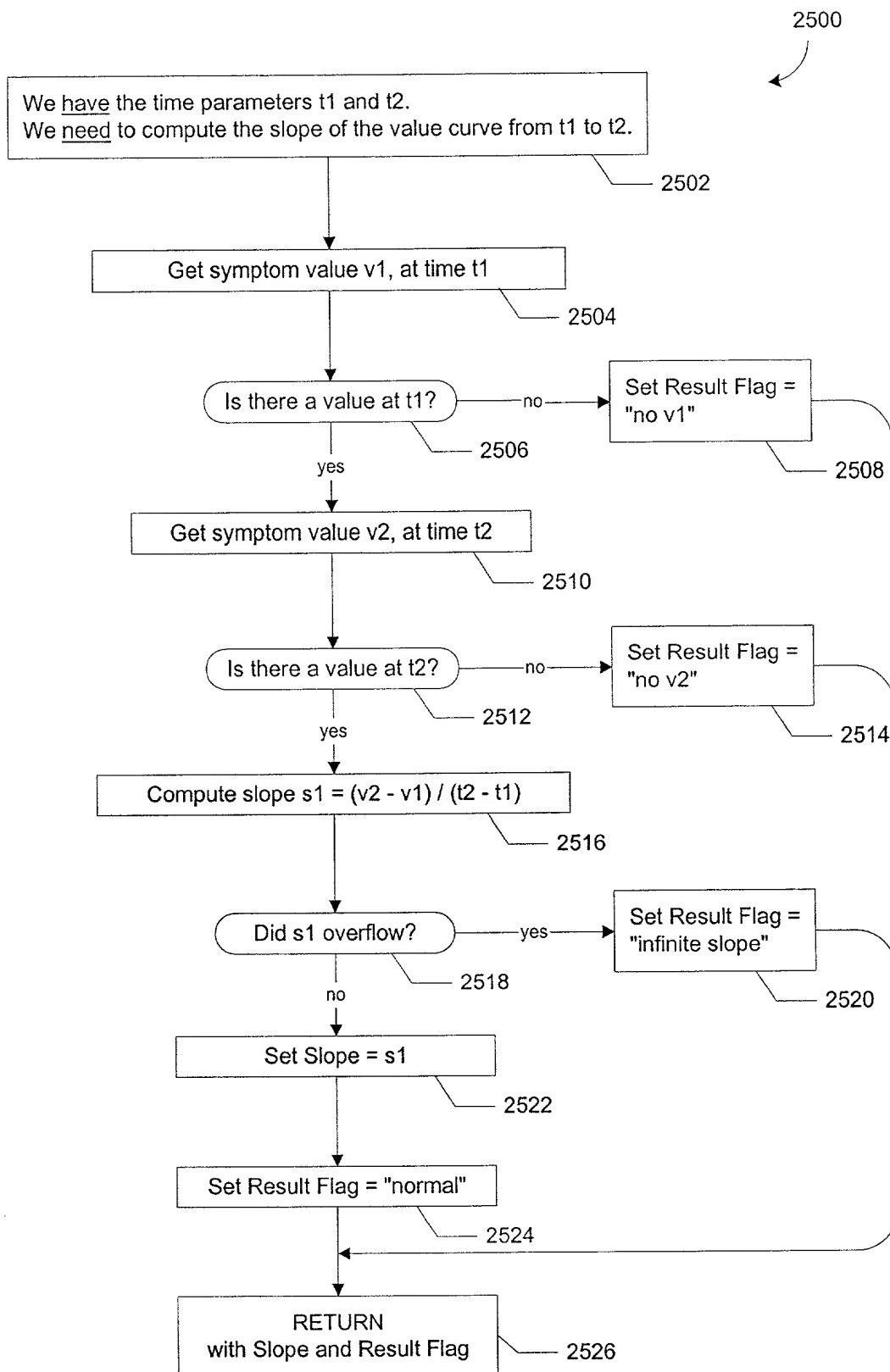


FIG. 25

Symptom Object - TREND Method

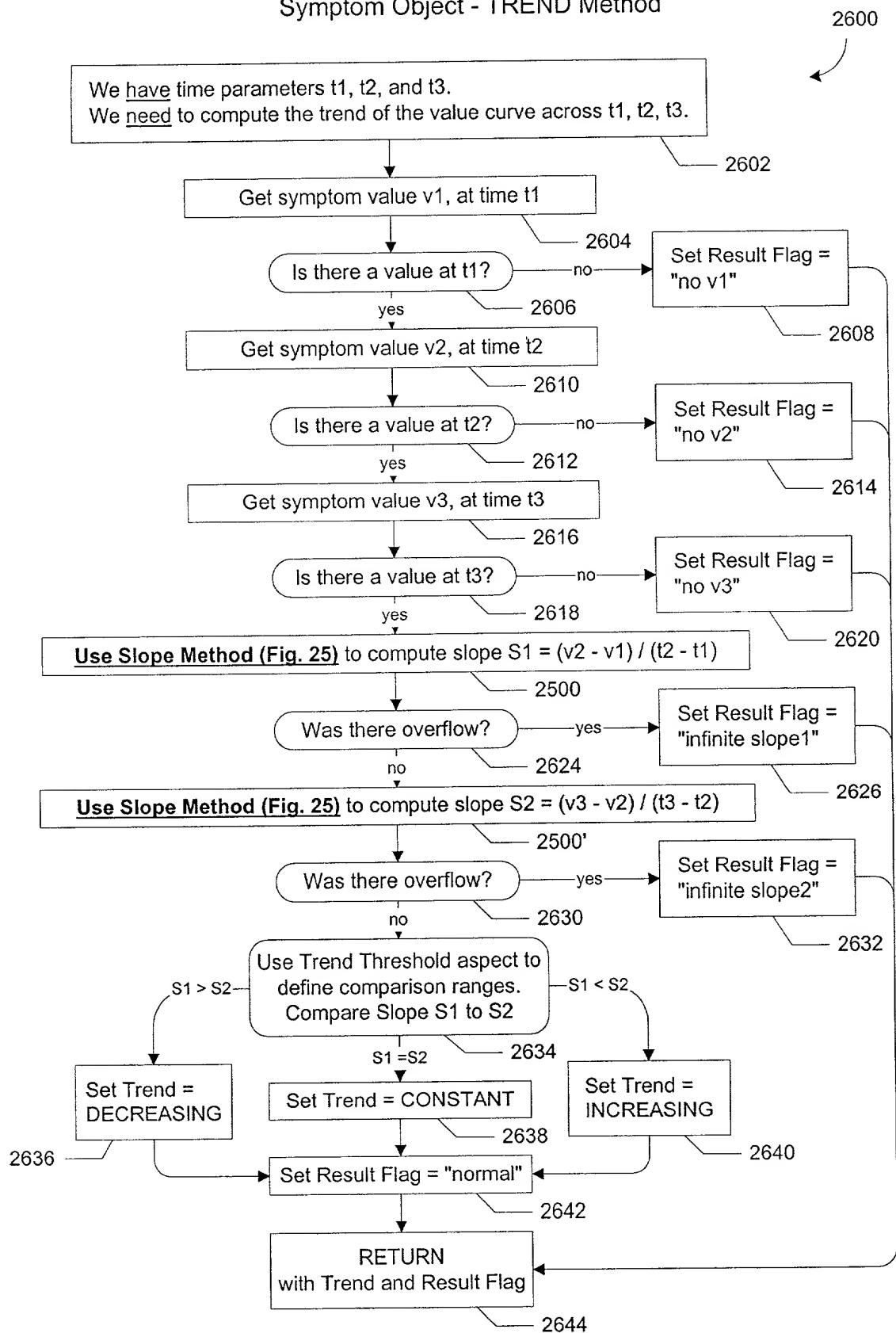


FIG. 26

2700

2702

2704

2706

2708

2710

HEADACHE DISEASE SYMPTOM MATRIX (DSM) SHOWING TWO COLUMN SCORING, SYNERGIES, AND HAI vs. VAI									
CONSULTATION BEGINS IN HAI AND ASKS QUESTIONS HORIZONTALLY, I.E., ACROSS THE ARRAY									
HAI MODE ----->>>>	COMMON MIGRAINE		CLASSIC MIGRAINE		CLUSTER HEADACHE		SUBARACHNOID HEMORRHAGE		
HISTORY OF THE PRESENT ILLNESS (NOTE: IN HAI, SOME ACTUAL, SOME ALTERNATIVE)	Actual	Alternativ	Actual	Alternativ	Actual	Alternativ	Actual	Alternativ	
Throbbing pain?	30			25	-20		-30		
Nausea 1?		20	35			-20	40		
Nausea 2?	35		30			-20	35		
Nausea 3?	40			35		-40		50	
Vomiting?		30		40	-20			25	
Unilateral?	30		30		40		-20		
Prodromal?	-40			50	-30		-30		
Aura with visual changes?	10		30		-30		-25		
If you have an aura, is the headache on the opposite side?		10		30	0		0		
Photophobia?		25	30		-10		40		
Horner's syndrome?	0		0		50		-20		
Recurrent up to once a month?	20			20	20		-20		
Recurrent in clusters?	0		0		50		-30		
AT THIS POINT, THE DSM MAY SEE THAT THE SCORE FOR CLASSIC MIGRAINE IS RAPIDLY ACCUMULATING AND THE SYSTEM WILL START ASKING QUESTIONS DOWN THE "ACTUAL" COLUMN FOR CLASSIC MIGRAINE									
VAI MODE VVVVVVVVVVVVVVVVV									
Family history of migraine?		30	40			0		0	
Feel "sick" afterwards?	40		45			-10		0	
Treated successfully with ergot?		20	40			20		0	
(NOTE: IN VAI ALL CLASSIC MIGRAINE QUESTIONS ARE ACTUAL)									
THE PATIENT COULD BE GIVEN THE CHOICE HERE OF GOING BACK AND RE-ANSWERING ALL OF THE QUESTIONS ABOUT CLASSIC MIGRAINE SUBSTITUTING THE "ACTUAL" LANGUAGE FOR THE ALTERNATIVE LANGUAGE. THIS IS NOT RECOMMENDED, BUT IN THIS WAY, NO MATTER WHAT DISEASE THE PATIENT HAS, IF IT COVERED, THE PATIENT WILL INTERACT WITH A DIALOG CREATED BY A WORLD CLASS EXPERT									
THE SYNERGY WEIGHTS ARE ADDED BELOW (NOT SHOWN)									
Simultaneous Synergies									
Sequencing Synergies									
Onset - Offset Analysis									
Summation Synergies									
•									
•									
•									
actual alternativ actual alternativ actual alternativ actual alternative									
DIAGNOSTIC SCORE OF BOTH COLUMNS ----->	165	135	280	200	50	-70	-60	75	
COMMON MIGR CLASSIC MIGR CLUSTER SUBARACHNOID HEM									
DIAGNOSTIC SCORE TOTAL ----->	300		480		-20		15		
THE DIAGNOSIS									
DSMhai3.xls									

2750

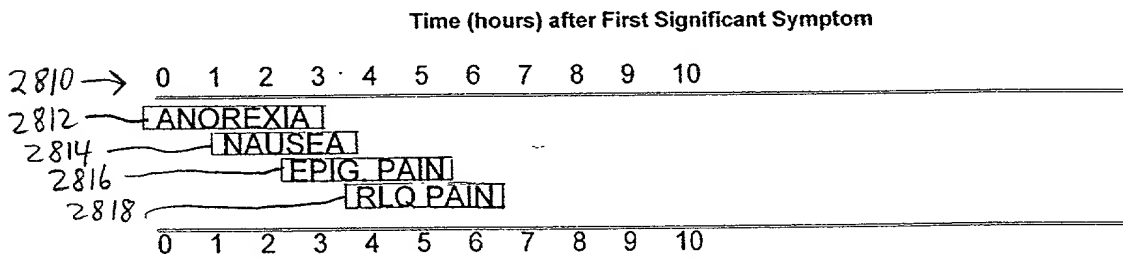
2752

2714 2715 2716 2717 2718 2719 2720 2721

FIG. 27

2800 →

This page demonstrates a type of question that lets the patient specify visually when a given set of symptoms occurred. The indicated Onset/Offset times are captured and used to adjust the diagnostic scores.



Use the mouse to slide symptoms left and right to indicate when they occurred

SUBMIT

2820

FIG. 28

MDATA EMBODIMENT AS OBJECTS

2900

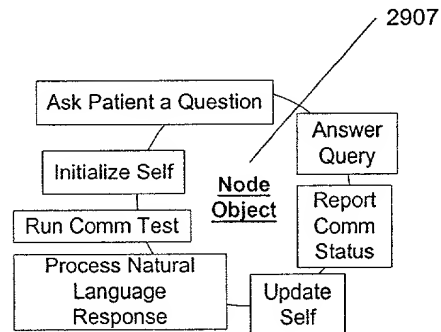
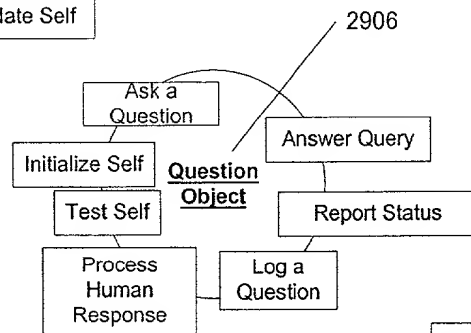
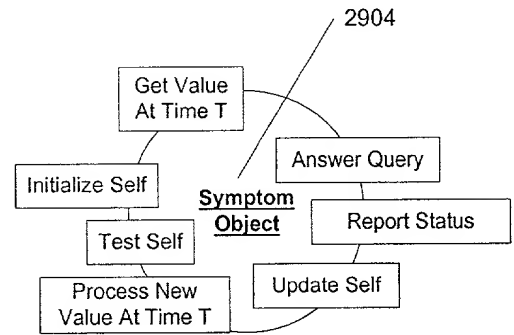
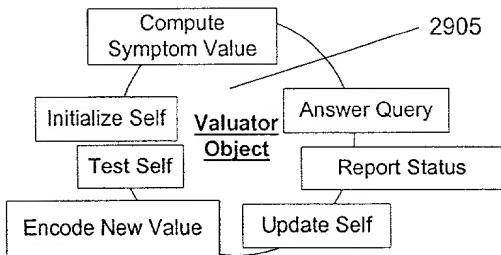
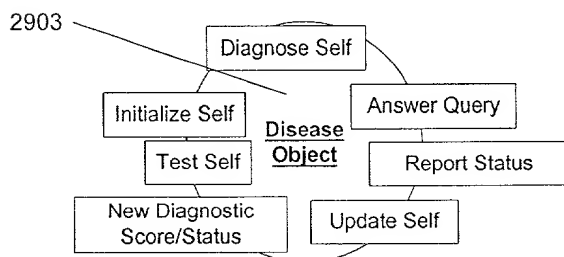
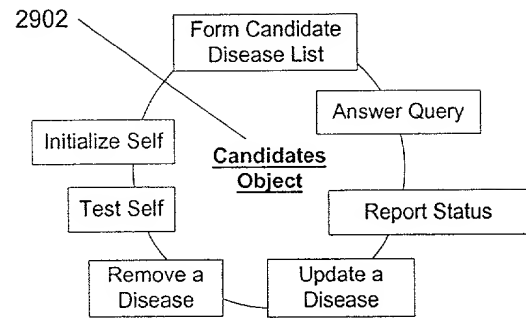
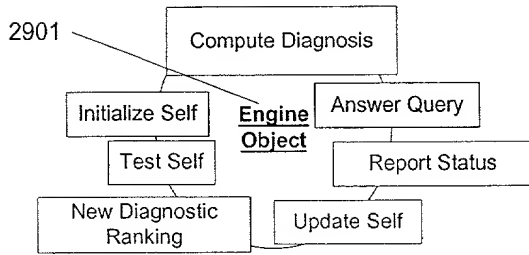


FIG. 29a

USING OBJECTS FOR DIAGNOSIS

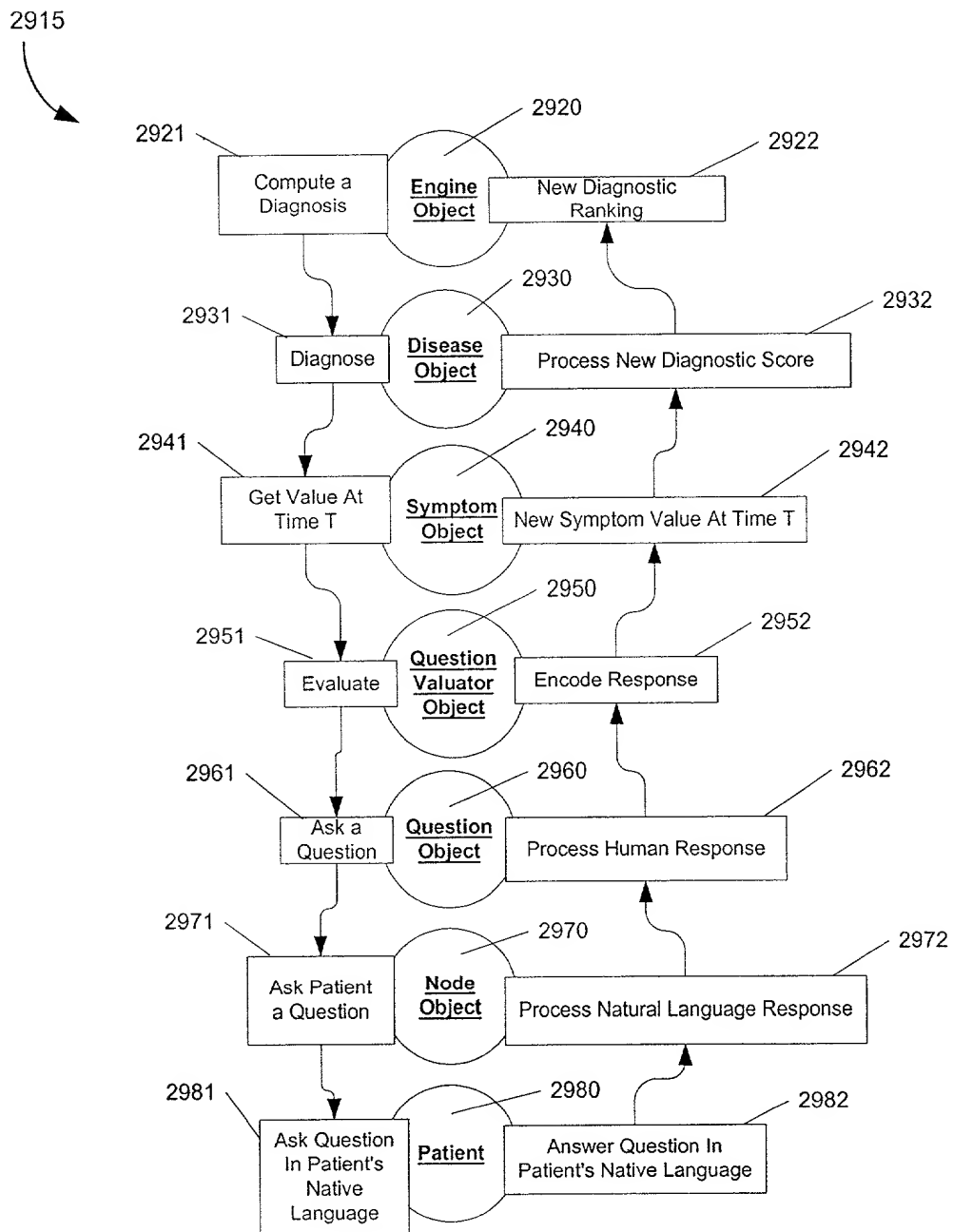


FIG. 29b

ALTERNATIVE SYMPTOM WEIGHTS

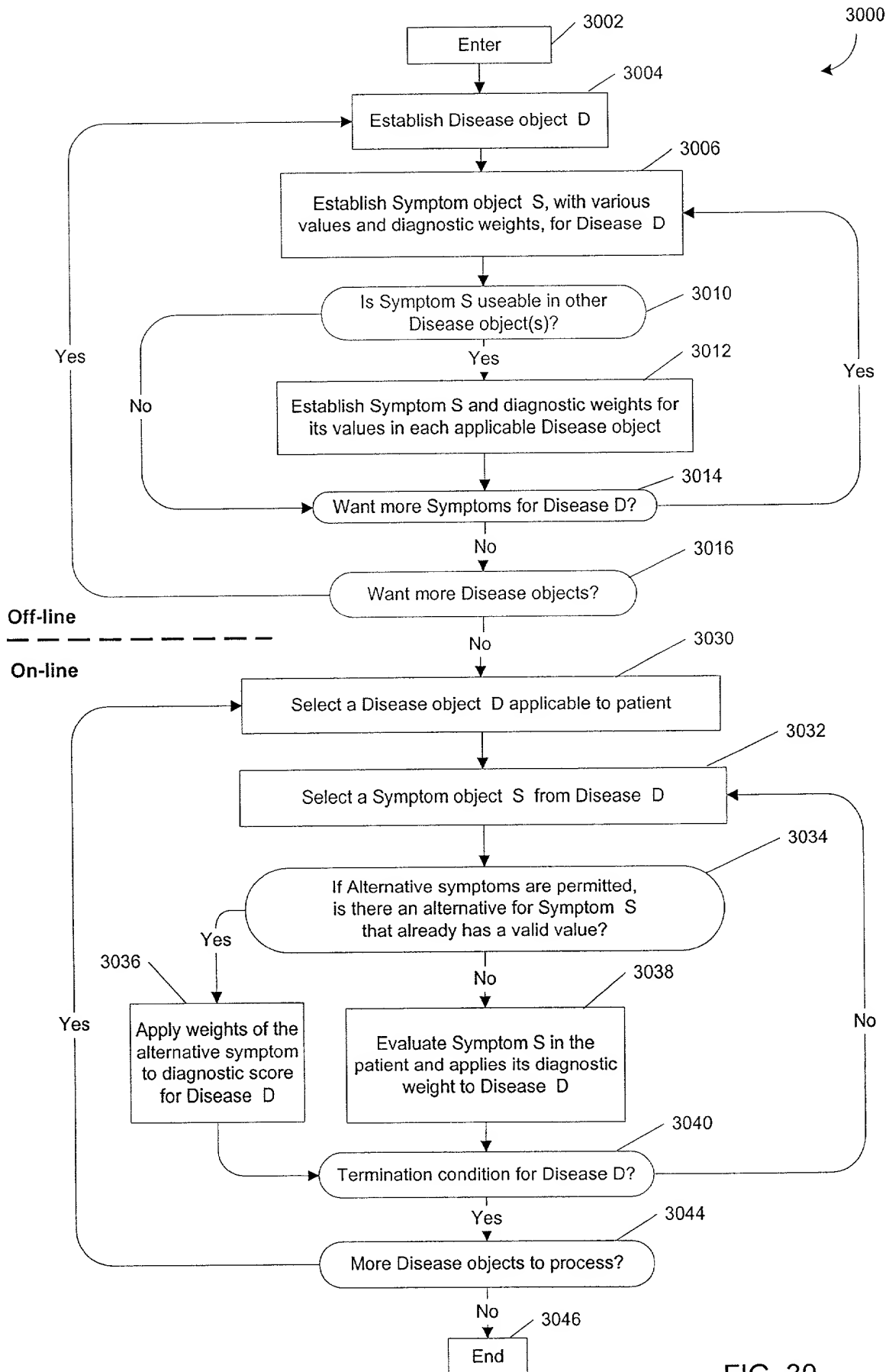


FIG. 30

REUSE OF MEDICAL OBJECTS

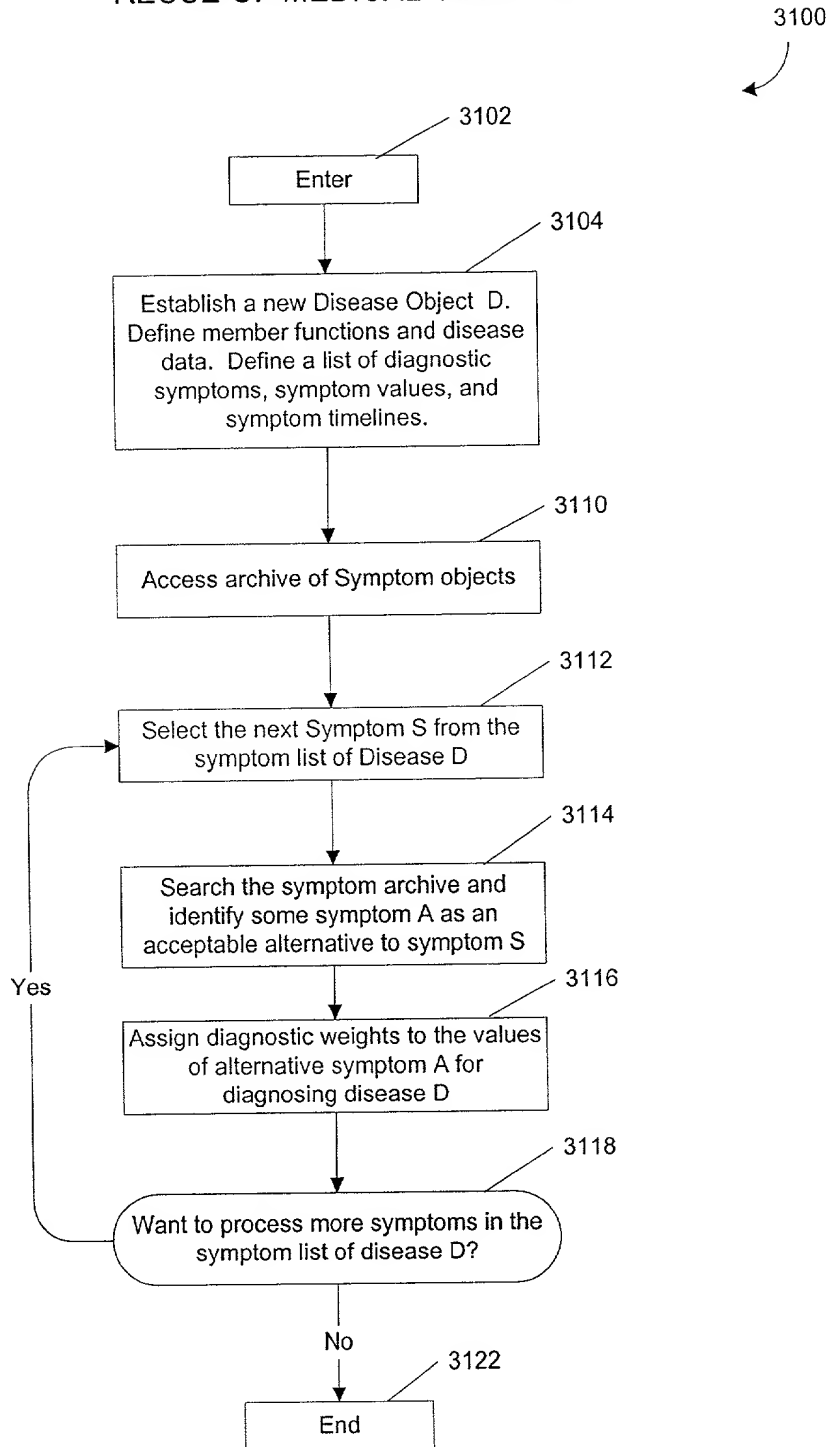
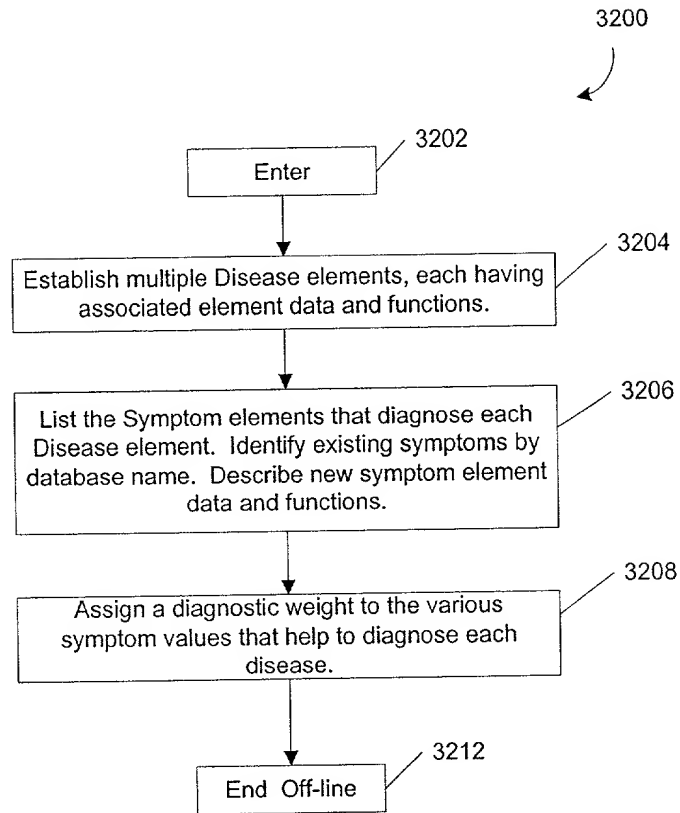


FIG. 31

SET UP OF SYMPTOM ELEMENTS



Off-line

FIG. 32a

USE OF SPECIFIED SYMPTOM ELEMENT(S)

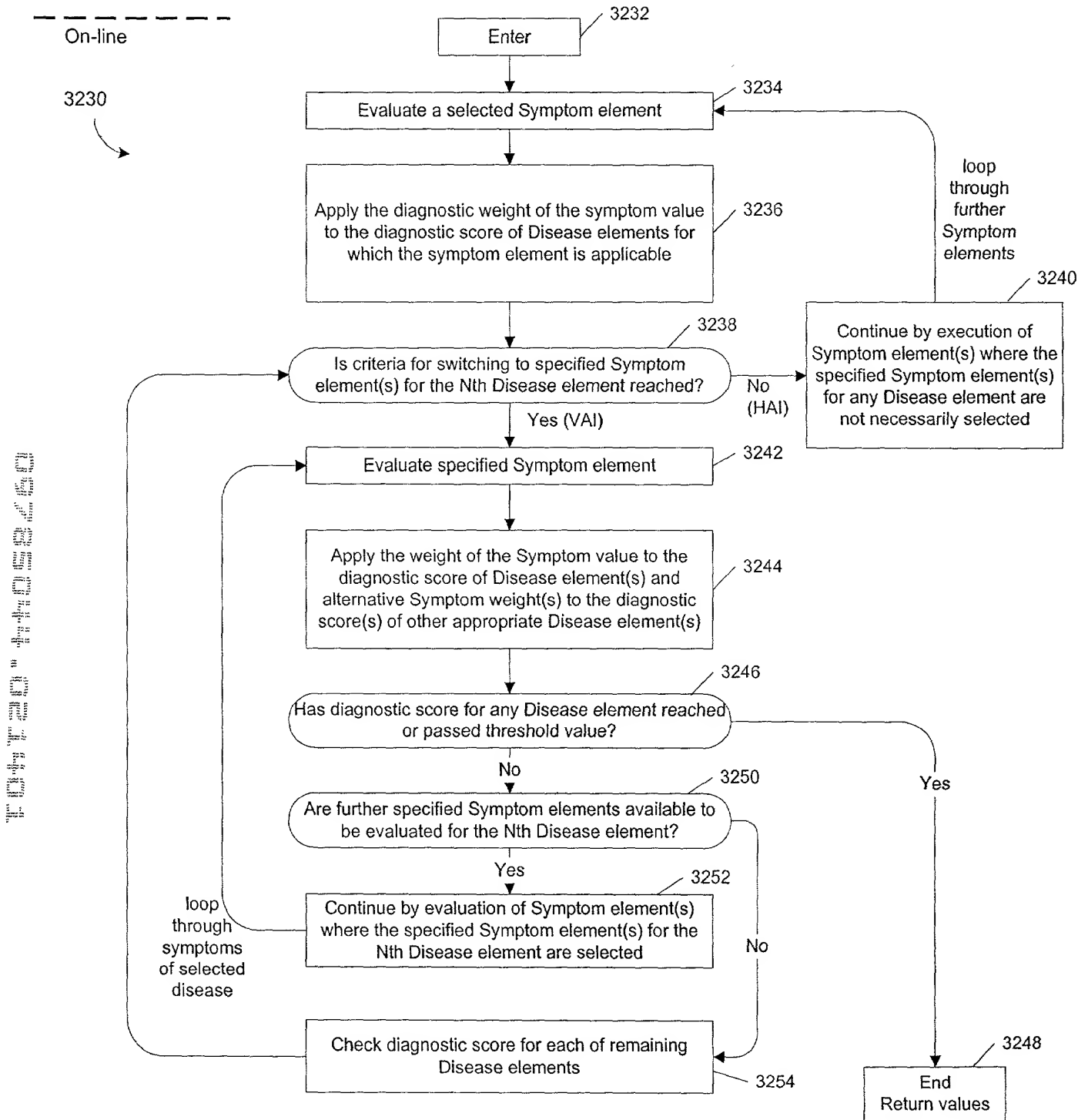


FIG. 32b

DISEASE TIMELINES

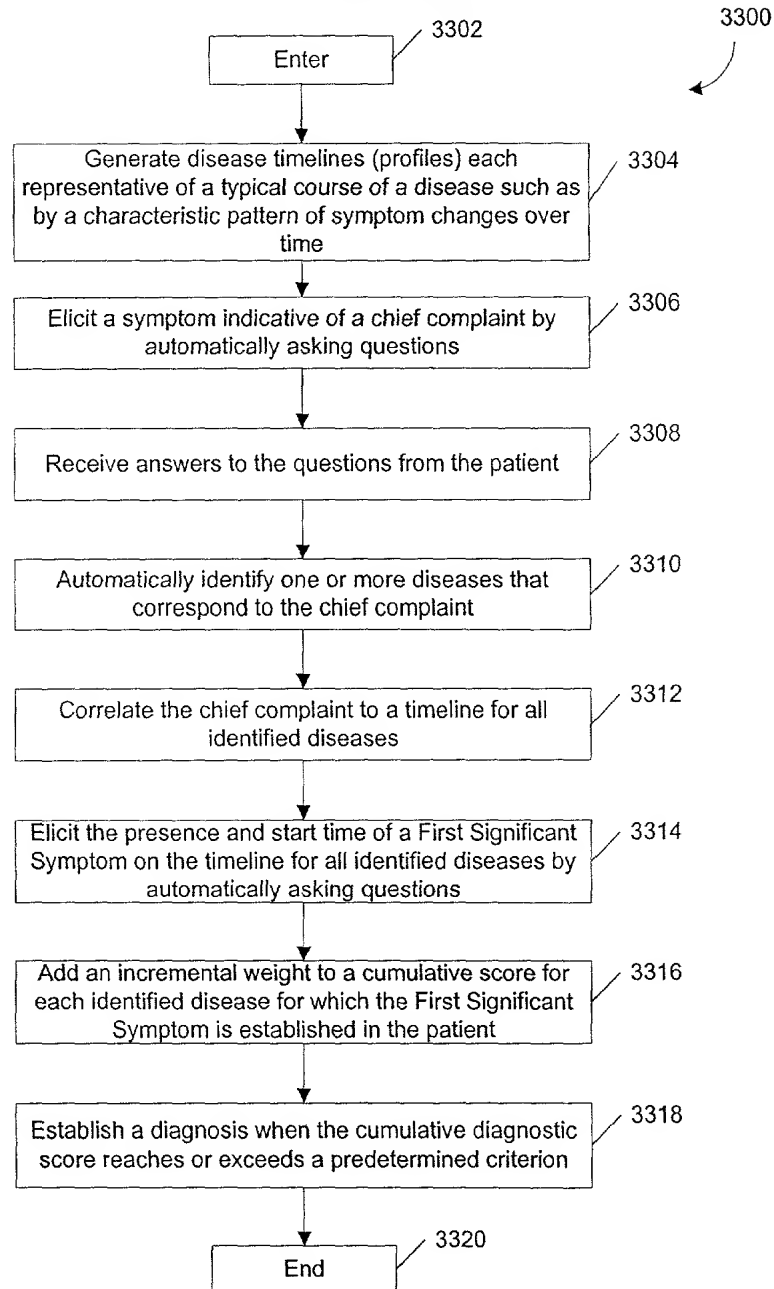


FIG. 33

DISEASE TIMELINES

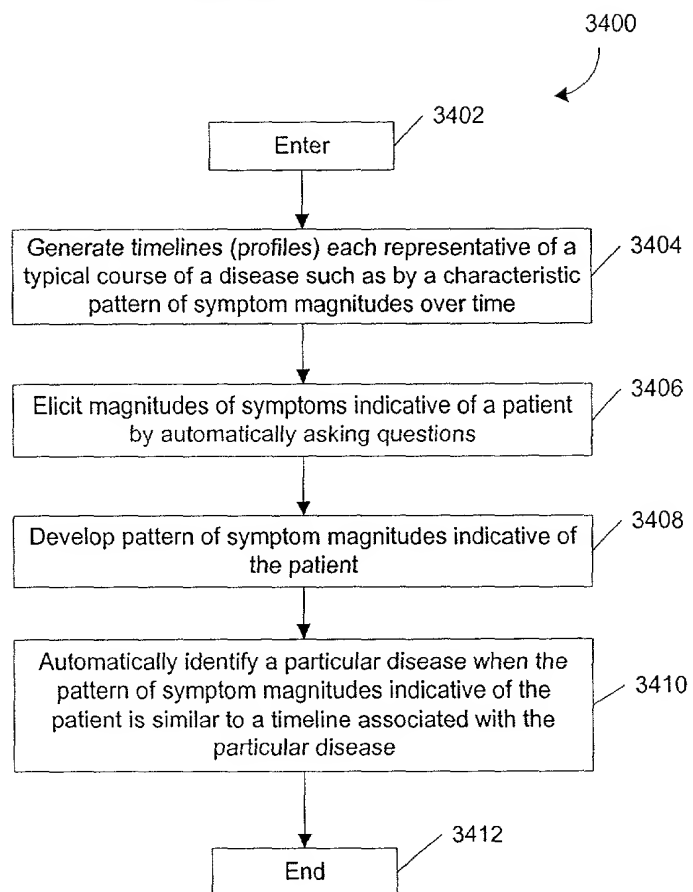


FIG. 34

3500

NETWORK CONFIGURATION

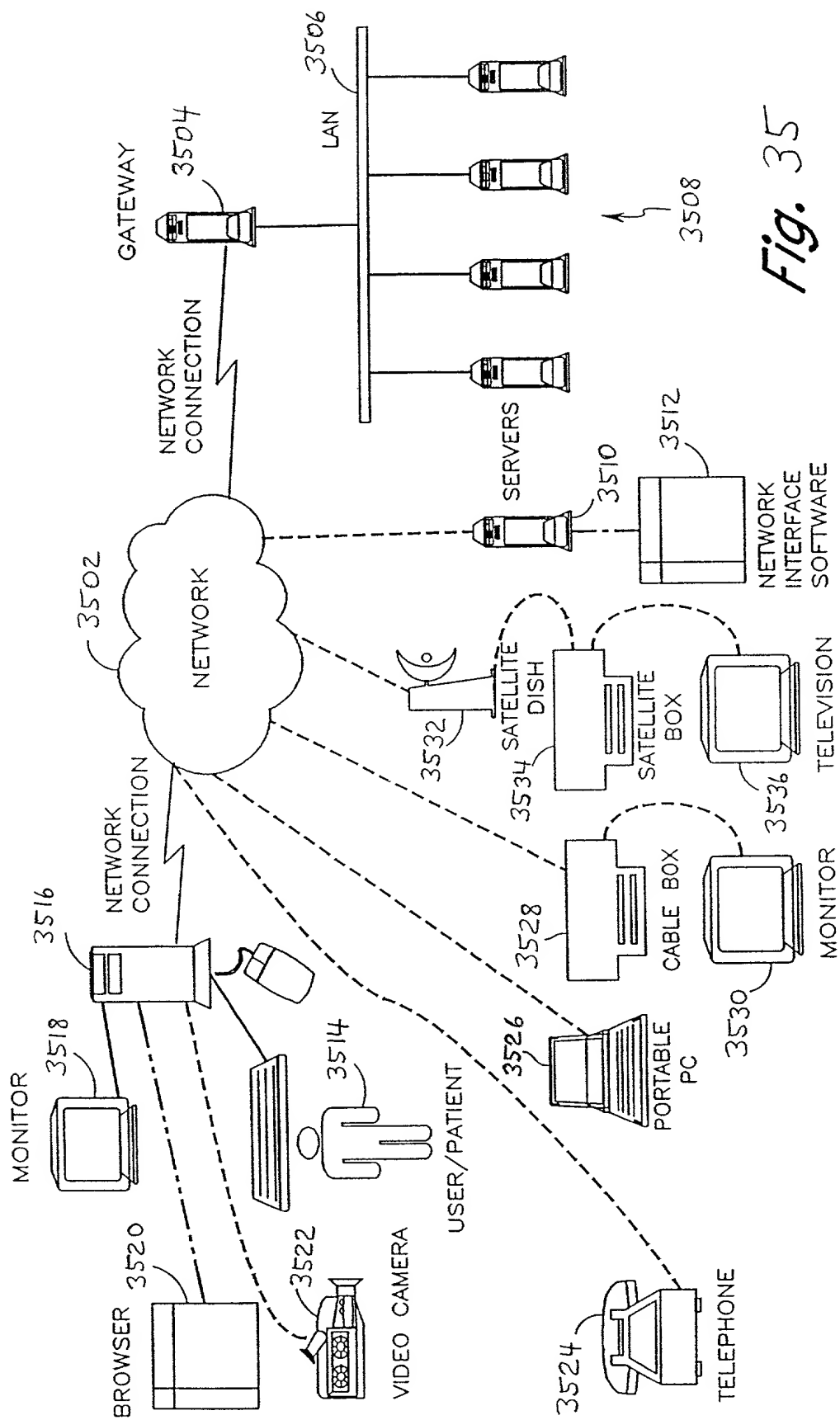


Fig. 35